

AN INVESTIGATION OF THE ROLE OF DONOR
SOPHISTICATION AS A MODERATOR OF
GIVING DECISION-MAKING

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A DISSERTATION

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ABSTRACT

This dissertation consists of three papers: two empirical papers that utilize new data sources to investigate the role of donor sophistication as a moderator of giving decision-making, and a literature review that details the previous twenty years of nonprofit accounting research and discusses the possibilities of new data sources.

In the two empirical papers, I examine how donor sophistication moderates how donors respond to organizational performance, governance, and compensation. The nonprofit accounting literature has been unable to directly differentiate between donations from sophisticated and novice donors, limiting prior studies to weak proxies of donor sophistication. I exploit a novel dataset of institutional donors to explicitly test differences in the nonprofit performance, governance and compensation measures used by sophisticated (institutional) and novice (individual) private donors in their giving decision-making. I find that, relative to individual donors, institutional donors respond more strongly to efficiency, financial vulnerability and governance. I also clarify prior research on the response of public donors to high levels of CEO compensation by separately examining individual donors and private foundations. I find that individual donors reduce donations to organizations with higher levels of CEO compensation, and no evidence that institutional donors do the same. I fail to find any evidence of a gender bias in individual or institutional giving. Overall, my findings suggest that donor sophistication plays a significant role in donor giving, and sophisticated donors act as particularly strong monitors of organizations, reducing agency problems.

The final paper is a literature review, coauthored with Julie M. Mercado and Linda M. Parsons. We document trends in nonprofit accounting research during the past two decades, specifically identifying data sources used, research topics investigated, and journals that published this work. Overall, the trends in availability and variety of data bode well for the future of nonprofit accounting research.

DEDICATION

To my wife, Kaitlyn, who took a massive leap of faith in moving across the country to support my dream of becoming an academic. Our partnership has grown so much in our time here, and I look forward to enjoying the fruits of our labor.

To my dog, Kayak, for the countless walks along the river, where I have had ~90% of my research ideas and breakthroughs, and who watches with calm curiosity as I furiously scribble on the whiteboard and pace the floor of our small apartment.

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Chapter 2 (“Differences in the Giving Decision-Making of Sophisticated and Novice Donors”) has benefitted from feedback during presentations at The University of Alabama, Mississippi State University, the AAA Government and Nonprofit Section Midyear Meeting, the AAA Rookie Camp, and the Doctoral Fellowship Seminar at the Association for Research on Nonprofit Organizations and Voluntary Action Conference, as well as comments from Tucker Davis and Iguehi Rajskey.

Chapter 3 (“Individual and Institutional Donor Responses to CEO Compensation Disclosures”) has benefitted from feedback during presentations at The University of Alabama, the AAA Southeast Regional Meeting, as well as comments from Tucker Davis and Maya Thevenot.

Chapter 4 (“The Growing Field of Nonprofit Accounting Research: 21st Century Data Sources, Topics, and Opportunities”), with Linda M. Parsons and Julie M. Mercado, has benefitted from the comments of two anonymous reviewers and Vaughan S. Radcliffe (editor).

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CHAPTER 1: INTRODUCTION

In this dissertation, I extend the literature on donor demand for charitable services by investigating the role of donor sophistication as a moderator of donor giving decision-making. For many nonprofit organizations, donations are the lifeblood of operations. Prior literature on donor demand for charitable services has focused on documenting the many organization characteristics, financial measures, and disclosures that are associated with future donations. However, due to data limitations, the literature has been quiet about how donor sophistication influences the relationship between organization characteristics, financial measures, and disclosures and donations. I argue that donor sophistication likely plays a significant role in how donors respond to organization characteristics, financial measures, and disclosures. Primarily this is because sophisticated donors are more likely to have the incentive and ability to examine accounting reports than novice donors (Yetman and Yetman 2013). The study of donor sophistication is important because nonprofit funders act as monitors of management, reducing agency costs due to misaligned incentives (Fama and Jensen 1983; Steinberg 1990; Brickley et al. 2010). If sophisticated donors act as particularly strong monitors of nonprofit organizations, their monitoring may influence how managers prepare financial statements and manage certain targets or expectations.

In the two sole-authored papers, I focus on how donor sophistication influences how donors respond to accounting disclosures related to performance, governance, and compensation.

Prior research in this area has been unable to directly differentiate between donations from sophisticated and novice donors, and has been forced to use weak proxies of sophistication. Using data from the recent E-Filer Database, I am able to separately examine donations from sophisticated (private foundation) and novice (individual) donors. Thus, I am able to explicitly test which group responds more strongly to performance, governance, and compensation disclosures.

The literature review (co-authored with Julie M. Mercado and Linda M. Parsons) compiles nonprofit accounting papers published in 29 journals from 2000-2020. We examine and discuss topics examined and data sources used to identify trends. A major motivation of our literature review is new data sources, primarily the E-Filer Database. We discuss how the E-Filer Database presents many opportunities to examine aspects of Form 990 that have never been possible, which is the basis of my two sole-authored papers.

Overall, this dissertation makes three primary contributions to the literature. First, I document that donor sophistication plays a significant moderating role in how donors respond to organizational performance, governance, and compensation. This is of importance because my findings generally suggest that sophisticated donors act as particularly strong monitors of organizational performance and governance, reducing agency problems. My findings related to compensation are mixed, but interestingly suggest that novice donors are stronger monitors of organizational compensation.

Second, I introduce a novel method for conducting explicit tests of the influence of donor sophistication on decision-making. Future research on donor decision-making will benefit from using this method in cross-sectional analyses, likely leading to greater insights on donor demand for charitable services. Finally, this dissertation contributes a thorough literature review of the

previous 20 years of nonprofit accounting research, including the data sources used and topics examined.

CHAPTER 2: DIFFERENCES IN THE GIVING DECISION-MAKING OF SOPHISTICATED AND NOVICE DONORS

Introduction

There are approximately 1.55 million nonprofit organizations registered in the United States, comprising 5.6% of GDP, with total donation revenue from the general public of approximately \$435 billion in 2016 (NCCS 2020).¹ A large part of the nonprofit accounting literature has examined the value of accounting reports to potential donors in their giving decision-making process. It is well documented that public donors appear to focus on spending ratios as a measure of “efficiency” in making giving decisions (Okten and Weisbrod 2000; Weisbrod and Dominguez 1986; Callen 1994; Posnett and Sandler 1989; Tinkelman 1999), which can incentivize short term actions by managers that may have long term negative consequences (Tinkelman and Donabedian 2007; Jones and Roberts 2006; Khumawala et al. 2005; Krishnan et al. 2006; Yetman and Yetman 2013). However, public donations as reported on Form 990 come from two categories of donors: individual and institutional (private foundations) donors. Because prior literature has only been able to examine public donations as a whole, and the majority of public donations are from individual donors (who are generally novices), research examining donor sophistication has been limited to the use of imprecise

¹ In this study I am examining donations from the general public, which are donations made with private (non-governmental) funds.

proxies.² Importantly, these imprecise proxies do not allow for explicit tests of differences between individual and sophisticated donor giving. In this study, I am able to separate public donations into donations from individual donors and grants from private foundations, a proxy for sophisticated donors, allowing for explicit tests of differences in their giving decision-making.

The primary purpose of this study is to examine differences in the effects of accounting and governance information on giving decisions by sophisticated and novice donors. Specifically, I examine differences in how institutional and individual donors respond to organizational efficiency, financial vulnerability, and governance practices. Extant literature suggests that nonprofit funders act as monitors of management, reducing the agency costs that may arise due to misaligned incentives between management and donors (Fama and Jensen 1983; Steinberg 1990; Brickley et al. 2010). It is possible that institutional donors are particularly strong monitors, as they have both the ability and the inclination to assess the accounting information of potential grantees. Assessing nonprofit performance can be difficult as, unlike corporations who wish to maximize profits, nonprofit organizations have diverse missions that make program outcomes difficult to both measure and compare across firms.³ As a result, individual donors may be less equipped to monitor nonprofits than institutional donors.

While Form 990 (990), the primary accounting report for nonprofit organizations, still does not differentiate between donations from institutional and individual donors (both are included in “public donations”), I utilize a novel dataset of donations from a sample of sophisticated donors, private foundations, which in 2016 gave \$70 billion in total grants to

² In 2016, individual donations made up 85% of public donations (private foundation grants making up 15%) (NCCS 2020).

³ FASB (1980) notes “the ability to measure service accomplishments, particularly program results, is generally undeveloped.” Reports of program outcomes are voluntary disclosures and not comparable across organizations, creating a self-selection bias. Despite recent changes to emphasize outcomes by private foundations (Easterling 2000; Leat 2006) and ratings agencies (Charity Navigator introducing a beta version of the “Impact and Results Beacon” in 2020), academic research is still largely reliant on financial input measures as proxies for performance.

nonprofit organizations (Foundation Center 2016). I first use 990s filed by private foundations (990-PF) to ascertain grants awarded and link them to grant revenues recorded by recipient nonprofit organizations. I then identify initial private foundation grants from a private foundation to a particular nonprofit organization. For the first time, I am able to differentiate between donations from sophisticated donors (private foundation grants) and those from private individuals (I call these “individual donations”). I utilize a seemingly unrelated regression design to examine differences in how sophisticated and individual donors respond to organizational performance and governance measures.

I find that sophisticated donors, relative to novice donors, respond more strongly to efficiency, financial vulnerability, and governance. Interestingly, I find that a subsample of the largest private foundations (which I argue is a more sophisticated group) respond less strongly to efficiency and governance, relative to individual donors. While my findings are likely primarily driven by the saliency of accounting reports to sophisticated donors, they are likely at least partially driven by differences in the preferences of sophisticated and novice donors in which organizational performance and governance measures they find useful. Additional analysis suggests that I am at least partially capturing differences in preferences.

This study makes several important contributions to the literature. First, I contribute to the donation demand model literature by conducting the first *explicit* tests of the influence of sophistication on giving decision-making. Due to our very limited understanding of donor sophistication, managers tend to tailor financial statements to the expectations of a broad swath of donors, assuming all respond equally. I find that sophisticated and individual donors differ in their usage of organizational performance and governance measures, which may influence how managers prepare financial statements and manage certain targets or expectations, such as high

program spending. Overall, my findings suggest that donor sophistication plays a significant role in donor giving, and sophisticated donors act as particularly strong monitors of organizations, reducing agency problems.

Second, I introduce a novel and large dataset of donations from institutional donors, useful for this study and future research on the role of sophistication in giving decision-making. The improved partition on sophistication proposed in this study allows for explicit testing of the role of sophistication on giving-decision making, and may lead to further insights on donor demand for charitable services. Third, my findings may be of use to private foundations evaluating their grant-making, organizations considering applying for private foundation grants, and others concerned with private philanthropy.

Finally, my study has relevance to regulators. As little research has been conducted on the grant-making of private foundations, this study provides regulators information on the kind of accounting information different groups may find useful in their decision-making, which may be relevant to designing accounting reports. In addition, my findings speak to the sophistication of private foundation grantmaking, which may be of use to regulators in setting tax policy, as the tax advantages of private foundations are predicated on their benefit to society.

Institutional Details and Prior Literature

Institutional Details

Private foundations are 501(c)(3) organizations that are typically founded by an individual or business with a large initial contribution. A founder may recognize they are unable to make effective giving decisions alone (especially in cases where there is a large amount of

funds), and establishing a private foundation allows for more systematic and targeted giving.⁴ The initial contribution and any subsequent contributions are invested and managed by trustees or directors. Private foundations typically do not directly perform charitable activities, instead giving grants to other organizations in the support of their future charitable beneficiaries (Sansing and Yetman 2006).⁵ In essence, private foundations act as a conduit for private wealth to charitable missions. Private foundations have grown significantly in the United States in recent decades, from \$145 billion in total assets in 1990, to surpassing \$1 trillion in total assets in 2020 (Board of Governors of the Federal Reserve 2020). Founders of private foundations have been scrutinized for low distribution rates as they enjoy generous tax advantages of approximately \$12.7 billion annually (Allen and McAllister 2019; Gersick 2006; Galle 2016).⁶ Congress has imposed tax regulations to ensure foundation funds are used appropriately for the public good and are not abused by founders. For example, the annual distribution regulation requires private foundations to disperse five percent of total assets yearly on qualifying expenses. Additionally, the dual-tax rate on investment income imposes a one to two percent tax on investment income based on the level of qualifying distributions (though the Tax Cuts and Jobs Act creates a uniform tax rate on investment income beginning in 2018). Research on private foundations has focused on private foundation behavior in response to these regulations (Yoder and McAllister 2012; Levine and Sansing 2013; Sansing and Yetman 2006). However, research has not examined actual private foundation grants, only the distribution rate (percentage of assets distributed as grants).

⁴ Founders may also create private foundations rather than giving directly for a few other reasons, including tax benefits, privacy, and a desire to create an entity that exists in perpetuity.

⁵ Private operating foundations perform some charitable activities themselves, though only 9% of private foundations are private operating foundations.

⁶ Allen and McAllister (2019) estimate this based on 2015 contributions to private foundations (\$32 billion) and a marginal tax rate of 39.6%.

Prior literature has emphasized that private foundations are uniquely positioned as out-of-market entities to support innovative practices and a long-term view of performance (Leat 2006; Schramm 2006). Quinn et al. (2013) argue private foundations also act as social entrepreneurs by using their significant resources to create and alter other organizations. Private foundations often employ professional grant makers and take a rigorous approach to grant-making and monitoring. Studies have examined recent trends in private foundations treating grants as investments, rather than gifts. Thus, private foundations may act as active investors, necessitating grant outcome evaluation (Easterling 2000; Volkov 2008). Leat (2006, p. 25) suggests that private foundation performance measurement is “not just interesting from a theory perspective, but a matter of practical, political, and topical interest.” Easterling (2000) recommends that private foundations should look beyond process monitoring (evaluating how the program was delivered by the staff and received by clients) to outcome monitoring (evaluating the actual charitable impact on the target beneficiaries). Private foundations can examine both public and non-public information in their grant-making and monitoring.

Sophistication and Decision-Making

The influence of sophistication on decision-making has been studied in other accounting contexts. For example, studies have shown that sophistication influences investor decision-making. Dhar and Zhu (2006) find that less sophisticated investors make suboptimal investments by investing with organizations closer to home and whose managers speak their language, and also trade too frequently. Sophisticated investors have also been shown to be less prone to the disposition effect, which states investors tend to sell assets that increase in value, while keeping those that have dropped in value (Dhar and Zhu 2006; Feng and Seasholes 2005). Frederickson and Miller (2004) conduct an experiment to examine the investing behavior of non-professional

investors relative to analysts. They find analysts use well-defined valuation models while non-professional investors are more likely to use simpler, heuristic based valuation models. Allee et al. (2007) find that less sophisticated investors are more likely than sophisticated investors to rely on quarterly earnings press releases with pro forma earnings information than those that don't. Generally, this literature stream makes it clear that investor sophistication plays a role in decision-making.

Donor Demand for Charitable Goods

Prior literature posits that agency problems arise in nonprofit organizations because external stakeholders (donors) provide funds to the organization for a charitable mission, while managers are unable to own parts of the organization and have an incentive to expropriate funds (Steinberg 1990; Fama and Jensen 1983; Core et al. 2006). Nonprofit funders play an important role as monitors of agency problems (Fisman and Hubbard 2003; Hansmann 1996), and resource dependency theory suggests that organizational structure and activities are influenced by funding composition (Pfeffer and Salancik 1978). As donations are critical revenues to most nonprofit organizations, donor behavior has been an important area of focus for researchers. Researchers have examined donor demand for charitable services, particularly how nonprofit donors respond to accounting reports when making giving decisions. This line of research is generally referred to as the donation demand model literature and begins with the seminal work of Weisbrod and Dominguez (1986), who find that donors are responsive to variables such as advertising expenditures and price, the after-tax cost of contributing the marginal dollar of output.⁷ Prior research has identified relationships between public donations and nonprofit efficiency (Weisbrod and Dominguez 1986; Posnett and Sandler 1989; Okten and Weisbrod 2000;

⁷ The price measure is effectively the inverse of the program ratio.

Tinkelman 1999), financial vulnerability (Trussel and Parsons 2008), and governance (Harris et al. 2015). The donation demand models used in prior research primarily examine public donations (990 Part VIII Line 1f). This measure includes donations from both individuals and private foundations, making it difficult to determine how donors of varying levels of sophistication respond to accounting reports. In this study I am able to, for the first time, separately examine individual donations and private foundation grants, increasing our understanding of how these donor groups respond to accounting reports.

Donor Sophistication

Yetman and Yetman (2013) define donor sophistication as “some combination of the donor’s *incentive* to incur the search costs involved in judging the quality of the program ratio as well as the donor’s *ability* to judge the quality of the program ratio.” In generalized terms, the donor’s incentive to incur search costs involved in evaluating accounting reports and the donor’s ability to judge accounting reports. When donors make small contributions to nonprofit organizations, they have less incentive to incur search costs, especially in terms of the search costs relative to the amount of the donation. Private foundations command large sums of charitable funds, and thus have greater incentive, relative to individual donors, to incur search costs as the proportion of search costs relative to the charitable donation is small. Relative to individual donors, private foundations likely also have greater ability to judge accounting reports. While Form 990 is relatively accessible to the public, small individual donors may be less able to evaluate measures of organizational performance and governance.⁸ Even the program ratio, a relatively simple measure to calculate, is not explicitly reported on the 990. Financial vulnerability and governance practices may require a higher level of sophistication to identify.

⁸ Form 990 are often available on organization websites, as well as through websites such as GuideStar.org and open990.org.

As private foundations employ professional grantmakers and have systematic processes for grant-making, they likely are better able to judge accounting reports than individual donors. Overall, I argue that private foundations are a good proxy for sophisticated donors as they satisfy the two conditions by Yetman and Yetman (2013), the *incentive* to incur search costs and the *ability* to judge accounting reports.⁹ What follows is a discussion of prior proxies for donor sophistication, as well as further discussion on how the usage of private foundation grants and individual donations is a superior proxy.

Prior literature has partitioned samples on donor sophistication at the organization level using the disclosure of restricted net assets as evidence of restricted donations (Balsam and Harris 2014; Balsam and Harris 2018; Yetman and Yetman 2013). These studies argue that only large, sophisticated donors have the means and oversight abilities to attach restrictions to their donations. There are two primary concerns about this partition: the use of restricted donations as a proxy for sophistication and the use of restricted net assets to estimate restricted donations. First, the use of restricted donations as a proxy for sophistication assumes an organization's donor base is homogenous; namely that all donors are sophisticated when the organization reports restricted donations or that all donors are novices when the organization does not report restricted donations. Additionally, the core argument of restricted donations as a proxy for donor sophistication relies on the assumption that only donors with the means and oversight abilities attach restrictions to donations. However, this is not always the case. The American Red Cross allows donors to choose among four options (Disaster Relief, Local Red Cross, Blood Services, and Where It Is Needed Most) when making an online donation. Only selecting "Where It Is Needed Most" will result in an unrestricted donation. Thus, a restricted donation could be made

⁹ I note that some individual donors are likely sophisticated in their giving decision-making. My tests are based on averages, and I argue that the *average* private foundation is more sophisticated than the *average* individual donor.

for as little as \$10. Also, some donors may choose to restrict gifts due to wariness of their donation being used for overhead expenses, suggesting some restricted donations may be a proxy for low donor trust (Li et al. 2012). Second, these studies use restricted net assets to estimate restricted donations. While the existence of restricted net assets does imply some amount of restricted donations, it does not necessarily provide information on the total number of restricted donations in a particular year or the percentage of donations that are restricted. It is possible that restricted donations are received and expensed in the same year, and thus never reported as restricted net assets. Generally, this suggests that the use of restricted net assets likely biases toward very large restricted donations that are not spent within a year. In light of these concerns, I argue that the use of restricted net assets as evidence of restricted donations is, at best, a weak proxy of donor sophistication, necessitating a new approach to examining donor sophistication. With the use of my novel dataset, I am able to separate public donations into those made by sophisticated donors and those made by novice donors, which allows me to examine donor gift decision-making at varying levels of sophistication with a higher degree of precision.

Some studies use government grants as a proxy for donations made by sophisticated donors, such that all public donations are considered to be made by novice donors (Balsam and Harris 2014; Harris et al. 2015). The core problem with this method is that public donations are not a suitable comparison group, as it is a measure of mixed sophistication. Government grants and private foundations are both made by grantmakers with the resources and ability to evaluate grantees, though there are a number of differences. Government grants use public funds and thus have strict rules on the usage of funds and monitor for appropriate usage. Government grants on average are larger and have greater oversight, slower turnaround, and more detailed application processes than private foundation grants. Finally, if an organization expends greater than

\$750,000 in federal funds in a year, they are required to complete a single audit, which combines the financial statement audit and an audit focused on the use of federal funds. As private foundations use private funds, they can take more risks and use a more long-term outlook in their grant-making decisions. As a result of these differences, donations made by private foundations are worthy of study separately from donations made by government grants.

Allen and McAllister (2019) conduct initial analysis on private foundation capital campaign grants. Capital campaign grants are a very specific type of grant, typically used for building renovation, equipment purchases, or land acquisition, among others (Allen and McAllister 2019). Capital campaign grants come with specific instructions on how the funds will be used and, thus, have little risk. These characteristics, as well as the fact they make up only approximately three percent of all private foundation grants, make them a non-representative sample of all private foundation grants. These issues preclude Allen and McAllister (2019) from using a comparison group of organizations that did not receive capital campaign grants, limiting their analysis to associations between organizational performance and capital campaign grants, *conditional on receiving a capital campaign grant*. They find that financially vulnerable organizations receive smaller private foundation capital campaign grants, and that efficiency is not related to the size of private foundation capital campaign grants. In contrast, my measure of initial private foundation grants allows me to examine private foundation giving more broadly. Because capital campaign grants are limited to a specific use, private foundations may be more likely to consider the organizations' governance, efficiency, or financial vulnerability in making unrestricted donations.

Hypothesis Development

In this study, I examine differences in how sophisticated and novice private donors use nonprofit performance and governance measures in their giving decision-making. Prior literature has examined how donors respond to accounting reports, but these studies have been unable to deconstruct public donations into those made by sophisticated and novice donors. Because sophisticated donors likely have the ability and inclination to examine both public and non-public accounting reports (such as grant applications in the case of private foundations), they may act as stronger monitors than novice donors, and thus, respond differently to measures of organizational performance and governance. I use private foundations as a proxy for sophisticated donors, and individual donors as a proxy for novice donors. Further, I use efficiency and financial vulnerability measures as proxies for organization performance, and governance disclosures as a proxy for organization governance.

Efficiency

Nonprofit efficiency, measured as the portion of total spending directed to programs rather than overhead, has been a popular proxy for organization performance in the literature. A nonprofit with a higher efficiency is distributing more of its funds to beneficiaries, the core goal of a nonprofit organization. The program ratio is easily derived and has been utilized extensively by charity watchdogs as a measure of performance. A number of studies document a positive association between this measure and public donations (Weisbrod and Dominguez 1986; Okten and Weisbrod 2000; Posnett and Sandler 1989; Tinkelman 1999; Callen 1994). However, critics of the widespread use of the program ratio argue that administrative and fundraising costs are critical aspects of nonprofit operations (Pallotta 2013). Tinkelman and Donabedian (2007) argue donor's reliance on the program ratio is incomplete and inaccurate, and only by evaluating

program outcomes can one properly assess performance. Additionally, prior literature finds that some organizations attempt to manipulate their program ratio (Tinkelman 1998; Khumawala et al. 2005; Jones and Roberts 2006; Krishnan et al. 2006; Yetman and Yetman 2013). Extant research finds a positive association between efficiency and public donations, and I note that the majority of public donations are from individuals.¹⁰ Private foundations, as sophisticated donors, may agree with individual donors and choose organizations with higher ratios when making grants. However, it is possible private foundations have the means and ability to look beyond the program ratio. Allen and McAllister (2019) interview three private foundation managers about the types of information used in their grant-making, and only one of the three stated that efficiency was an important financial measure. This leads to my first hypothesis, stated in the null:

HYPOTHESIS 1: The association between efficiency and private foundation grants is not different from the association between efficiency and individual donations.

Financial Vulnerability

Tuckman and Chang (1991) define a nonprofit organization as financially vulnerable if it is likely to cut program offerings in the event of a financial shock, and Parsons and Trussel (2009) find that measures of financial vulnerability are incrementally informative to efficiency ratios in predicting public donations. Private foundations likely want to ensure that a grantee is not going out of business in the short term, and that the organization will be able to use grant funds appropriately for the intended programs. However, it is possible that, in some cases, private foundations will choose to give a grant to a struggling organization to keep it operational.

¹⁰ McDowell et al. (2013) conduct an experiment with university students as proxies for individual donors, and find that their donations are not associated with efficiency measures. Their sample is a proxy for small, individual donors, who may not be representative of the larger group of individual donors, which includes donors who give large sums.

Overall, it is unknown how sophisticated and individual donors may differ in response to financial vulnerability. This leads to my second hypothesis, stated in the null:

HYPOTHESIS 2: The association between financial vulnerability and private foundation grants is not different from the association between financial vulnerability and individual donations.

Governance

Effective governance limits misuse of assets and better aligns executive's objectives with donor's objectives. Donors can assess the governance practices of the organization through governance disclosures, which were expanded beginning in 2008 (Harris et al. 2015). The revised 990 increased the number of required governance disclosures, which cover topics such as policies, audits, compensation, board, and management, among others (Smith and Shaver 2009). Harris et al. (2015) find that governance disclosures are associated with future donations, suggesting that individual donors respond to good governance practices. Yetman and Yetman (2012) find that good governance mitigates program ratio management. Private foundations, as sophisticated private donors, likely examine governance disclosures to evaluate the governance practices of potential grantees. This leads to my third hypothesis, stated in the null:

HYPOTHESIS 3: The association between governance and private foundation grants is not different from the association between governance and individual donations.

Research Design

Donation Measures

Prior literature has specified donations using various 990 disclosures. Part I Line 8 (Part VIII Line 1h), despite being labeled as "Contributions and Grants", includes individual donations, government grants, private foundation grants, federated campaigns, membership dues,

fundraising events, noncash contributions and “all other contributions, gifts, grants and similar amounts not included above” (Harris et al. 2015; Surysekar et al. 2014). Most studies remove indirect public donations (federated campaigns, member dues, and fundraising events) and government grants from this list, and term the resulting measure direct public donations (Balsam and Harris 2014; Amin and Harris 2020; Heutel 2012; Jacobs and Marudas 2009; Trussel and Parsons 2008; Tinkelman and Mankaney 2007; Marudas 2004; Okten and Weisbrod 2000). However, this measure includes donations from both individuals (novice donors) and private foundations (sophisticated donors). Extant literature was unable to separate direct public donations, which are made up primarily of individual donations, by donor sophistication. As a result, the behavior of private foundations may have been obscured in previous studies. In this study, I propose separating public direct donations into two distinct variables: private foundation grants to nonprofits (derived from foundations’ 990-PF grant disclosures) and individual donations (Part VIII Line 1f less the derived private foundation grants). Because I examine differences between sophisticated and novice donor decision-making in this paper, I use private foundations and individual donors as proxies for sophisticated and novice donors, respectively.

Model Specification

To test my three hypotheses, I estimate the following Seemingly Unrelated Regression (SUR) model:

$$\begin{aligned}
 \text{Donations Measure}_{i,t} = & \beta_1 \text{Program Ratio}_{i,t-1} + \beta_2 \text{Predicted Vulnerability}_{i,t-1} + \\
 & \beta_3 \text{Governance}_{i,t-1} + \beta_4 \text{Ln(CEO Compensation)}_{i,t-1} + \beta_5 \text{Ln(Total Assets)}_{i,t-1} + \\
 & \beta_6 \text{Ln(Fundraising Expense)}_{i,t-1} + \beta_7 \text{Org Age}_{i,t-1} + \beta_8 \text{Single Audit}_{i,t-1} + \\
 & \beta_9 \text{Indirect Support}_{i,t-1} + \beta_{10} \text{Professional Accounting Fees}_{i,t-1} + \\
 & \beta_{11} \text{Ln(Program Service Revenue)}_{i,t-1} + \beta_{12} \text{Ln(Government Grants)}_{i,t-1} + \\
 & \beta_{13} \text{Ln(Individual Donations)}_{i,t-1} + \Sigma \text{Year}_t + \Sigma \text{Industry}_k + \Sigma \text{State}_m + \varepsilon
 \end{aligned} \tag{1}$$

Generally, SUR is used to correct for correlated errors across equations, and is equivalent to equation-by-equation OLS when each equation includes the same set of regressors (Amemiya

1985). Importantly, SUR allows for the comparison of coefficients across equations with a z-test. The first donations measure examined is *Ln(Individual Donations)*, as defined above. The second donations measure used is *Ln(Initial PF Grants)*. I identify private foundation grants by tracing 990-PF grant disclosures to recipient nonprofit organizations, and remove grants from private foundations that give to fewer than 5 unique grantees, as those grants are likely not made based on financial information. Next, I separate reported grants into initial and subsequent, where an initial grant is the first time a private foundation gives to a grantee. I then sum the initial private foundation grants received by an organization in a particular year, as a nonprofit organization can receive a first-time grant from multiple private foundations in the same year.

Program Ratio, calculated as the share of total expenses used for programs, is used as a proxy for efficiency. In order to examine the effect of financial vulnerability on grant-making, I use the model derived in Allen and McAllister (2019) to calculate *Predicted Vulnerability*, which estimates the likelihood that a future distress causes the organization to reduce its program expenses. The model regresses the likelihood of *Distress*, defined as 1 if an organization reports a 20 percent decline in net assets and a decrease in program expenses over three years, and zero otherwise, on several determinants of vulnerability.¹¹ I provide a detailed description and the results of my estimation of the predicted vulnerability model in Appendix B. To proxy for good governance, I construct an index measure using 16 governance measures reported on 990 Part VI, consistent with (Bloch et al. 2020). Boland et al. (2020) discuss alternative specifications of governance as a control variable, but they recommend that researchers consider the underlying theory when specifying governance as a variable of interest. To construct *Governance*, and

¹¹ I use this *Predicted Vulnerability* measure as I seek to examine the organization's vulnerability to a future financial distress, and *Distress* is a measure of a current distress. Results are robust to the usage of *Distress* in the model 1.

following Bloch et al. (2020) and Harris et al. (2015), I include 16 measures reported on 990 Part VI that are likely all relevant to a private foundation evaluating the governance practices of a potential grantee. The included variables are increasing in good governance and include various policies (conflict of interest, whistleblower, document destruction, executive/officer salary approval, board/committee meeting minutes, and 990 review), relationships between officers, document changes, 990 accessibility on website, and material asset diversions. I code each of the 16 variables as 1 if the control is checked “Yes” and zero otherwise, then calculate a score that is the sum of these (ranging from 0 to 16).

For the sake of comparability, I use the same set of control variables in all models. Control variables are consistent with those used in prior literature on donation demand models. To measure executive compensation, I use the natural log of total compensation for the highest paid executive ($\ln(CEO\ Compensation)$). Because the chief executive of a nonprofit may not carry the title of “CEO,” I identify use the most highly paid executive in constructing this measure, following (Balsam and Harris 2018; Frumkin and Keating 2010). I control for size using $\ln(Total\ Assets)$, and *Org Age*, defined as the difference between the current year and the year of formation (Okten and Weisbrod 2000; Trussel and Parsons 2008; Posnett and Sandler 1989). As there may be differences in organizations that attempt to receive private foundation grants, I control for fundraising efforts with $\ln(Fundraising\ Expense)$. Thornton and Belski (2010) find donor response to accounting reports is influenced by financial reporting quality, so I include proxies for financial reporting quality. These proxies are, *Single Audit*, an indicator for organizations that conduct a single audit, *Indirect Support*, an indicator for organizations that report revenues from federated campaigns, and *Professional Accounting Fees*, an indicator for organizations that report greater than \$1000 in professional accounting fees. To control for

potential crowding out/in effects, I include other revenue sources with $\ln(\text{Program Service Revenue})$ and $\ln(\text{Government Grants})$ (Petrovits et al. 2011; Boland et al. 2020). Year and industry fixed effects control for time trends and time-invariant differences between industries, respectively. I also include state fixed effects to control for differences in the demand for and supply of private foundation funds among states. Variables of interest and control variables are lagged one year because private foundation representatives are likely examining prior-year 990s in their grant-making process. Organizations that receive no private foundation grants in the sample period are included as control organizations. All continuous variables are winsorized at the 1st and 99th percentile to adjust for outliers.

Alternative Specifications

Despite the inclusion of control variables and fixed effects, it is possible that organizations that receive initial private foundation grants are different from organizations that do not in an unobserved way, resulting in selection bias. To account for this potential bias, I use the same SUR model as in the main test with an alternative sample comprised only of organizations that received a government grant in year t . This creates a test of differences in how private foundations and individual donors respond to organization performance and governance, *conditional on a baseline level of quality*. I also specify an alternative model 1 using a probit regression, with an indicator variable equal to one if the organization received any initial private foundation grants, zero otherwise, as the dependent variable.¹² This specification isolates the association between variables of interest and the likelihood of receiving an initial private foundation grant.

¹² I am unable to do the same with individual donations as there is not a sufficient sample of organizations that receive no individual donations.

As I argue private foundations, relative to individual donors, are sophisticated due to their incentive and ability to examine accounting reports, it is likely that a subsample of private foundations with greater incentive and ability are more sophisticated. Based on this reasoning, I run an alternative test where I restrict the initial private foundation grants examined to those that come from the largest quintile of private foundations (by total assets). These large private foundations are most likely to have robust and systematic processes for grantmaking.

Results

Sample Selection

I gather my sample from multiple datasets purchased from Open990. Open990 provides free, searchable information about nonprofit organizations and sells large datasets for use in academic research. Each dataset is derived from the Form 990 E-Filer database, a relatively new data source. Starting in 2010, the IRS began accepting electronically filed 990 and 990-PF, and in 2016 made the E-Filer database available as XML files through Amazon Web Services for free. The E-Filer database is of particular importance because it makes many fields on the 990 and 990-PF accessible in a machine-readable format that prior datasets did not include. In this case, the E-Filer makes newly available 990-PF part XV disclosures, where private foundations list grants distributed, including the name and address of the nonprofit grantee and the amount granted. While there is still no way to differentiate private foundation grants from donations from individual donors (individual donations) on the recipient organization's 990, the 990-PF Part XV disclosures can be used to identify private foundation grants made to nonprofit organizations. Nonprofit organizations with total assets in excess of \$500,000 or revenue in excess of \$200,000 are required to file a 990, and private foundations of all sizes are required to file 990-PF. The 990 provides organizational financial and governance disclosures used, and the

990-PF provides financial information, as well as grants distributed by the foundation. Because private foundations were not required to file electronically until 2019, the E-Filer database is not a complete dataset of 990-PF filings during my sample period. As some private foundation grants are not able to be identified, they remain in the individual donations variable. This biases against finding a difference in how private foundations and individual donors respond to organization performance and governance. The National Bureau of Economic Research (NBER) reports an approximately 57% increase in total assets reported by private foundations in my sample period of just nine years (\$585 billion to \$919 billion), evidence of the high rate of growth of private foundations in the United States. The E-filer database climbs from including 30% of total private foundation assets in 2010 to including approximately 55% in 2018.

Table 1, Panel A reports sample selection for the process of tracing 990-PF grant disclosures to nonprofit organization recipients. In order to calculate the amount of private foundation grants that an organization receives, I begin with the Open990 Grants dataset, which includes 7,099,516 private foundation grants. The grants dataset lists all grants from electronically filed 990-PF Part XV, including the amount, and the name and state of the grantee. I perform numerous procedures to trace private foundation grants to nonprofit organization recipients. I detail these procedures and the results in Appendix C. This process leads to a total of 3,062,999 private foundation grants totaling \$113 billion to nonprofit organization grantees. Because private foundations are likely to use grant reports detailing how grants were used rather than accounting reports of overall organizational performance in making subsequent grants, I choose to examine the *initial* grant made by a private foundation to a grantee. I separate private foundation grants into initial and subsequent grants, where grants are designated as initial only the first time that a private foundation gives to the grantee, following Allen and McAllister

(2019). Additionally, I remove grants from the first year a private foundation appears in the data, as it is impossible to tell if a grant is an initial or subsequent grant. Finally, I remove grants from private foundations that give to fewer than five unique grantees during my sample period, as some foundations exist to provide support to one or just a few organizations, and are likely not basing their giving to that organization on their financial statements. I end with 1,525,496 initial private foundation grants to nonprofit organizations in my sample.

Table 1, Panel B reports sample selection for organization-year data, beginning with the Open990 Governance file, which contains electronically filed 990s from 2010-2020. This dataset consists of organization-years with financial, governance, and compensation information. I then merge the sum of initial private foundation grants received with the organization-year dataset. For example, if an organization received an initial grant from two separate foundations and a subsequent grant from another foundation, only the two initial grants will be included in *Initial Private Foundation Grants*. I finish with a large sample of organization-years, including *Initial Private Foundation Grants* and an *Individual Donations* variable that removes both initial and subsequent identified private foundation grants. My final sample includes 76,053 treatment observations for organizations that received an initial private foundation grant and 127,934 control observations for organizations that received no private foundation grants during the sample period.

Descriptive Statistics

Table 2 reports the distribution of private foundation grants, both initial and subsequent, to different nonprofit industries reported in the E-Filer database during my sample period. Education organizations (28%) received the most grant monies, with International, Foreign Affairs and National Security charities (11%) next and Arts, Culture and Humanities nonprofits

(10%) rounding out the top-3 industries. This table shows that the distribution of private foundation grants is not even across industries, which demonstrates the need to control for industry in my models.

Table 3 Panel A reports descriptive statistics for initial private foundation grant recipients, and Panel B reports descriptive statistics for non-private foundation grant recipients. I also run untabulated t-tests of differences between initial private foundation grant recipients and non-private foundation grant recipients. I find that initial private foundation grant recipients are more efficient, less financially vulnerable, and report better governance than organizations that are not grant recipients. Initial private foundation grant recipients are also larger, older, and report higher fundraising expenditures and CEO compensation relative to control organizations.

Main Tests of Hypotheses

Table 4 reports the results of model 1 using the full control sample. Column 1 reports the results for the SUR of $\ln(\text{Individual Donations})$, where I find a positive association with *Program Ratio* and *Governance* and a negative association with *Predicted Vulnerability*, consistent with prior literature.¹³ Overall, my results suggest that the donations variable used by prior literature reflects primarily the donations from novice donors. In Column 2, I report the results for the SUR of $\ln(\text{Initial PF Grants})$, where I again find positive coefficients on *Program Ratio* and *Governance*, and a negative coefficient on *Predicted Vulnerability*. My results suggest that a 10 percent higher program ratio is associated with a 3.4 percent higher level of individual donations and a 5.6 percent higher level of initial private foundation grants. A 10 percent higher level of predicted vulnerability is associated with a 6.8 percent lower level of individual donations and a 26.5 percent lower level of initial private foundation grants. Finally, an increase

¹³ Results are relatively unchanged when the models are estimated separately with OLS.

of one governance practice is associated with a 4.2 percent increase in individual donations and a 7.9% increase in initial private foundation grants. Next, I examine the z-tests of the differences between the coefficients on the variables of interest and control variables of the two models. For each of my three variables of interest, I find that private foundations respond more strongly than individual donors. Of particular note is that private foundations respond approximately four times stronger to *Predicted Vulnerability*. Due to the significance of the z-tests, I reject the null of each of my hypotheses.

Turning to the control variables in Table 4, coefficients are as expected; $\ln(\text{Total Assets})$, $\ln(\text{Fundraising Expense})$, and $\ln(\text{CEO Compensation})$ are positively associated with both $\ln(\text{Individual Donations})$ and $\ln(\text{Initial PF Grants})$. I find *Org Age* is positively associated with $\ln(\text{Individual Donations})$ and not associated with $\ln(\text{Initial PF Grants})$. I find *Single Audit* and *Indirect Support* are both positively associated with $\ln(\text{Individual Donations})$ and $\ln(\text{Initial PF Grants})$, as expected. I find *Professional Accounting Fees* are negatively associated with $\ln(\text{Individual Donations})$, but not associated with $\ln(\text{Initial PF Grants})$. $\ln(\text{Program Service Revenue})$ is negatively associated with both $\ln(\text{Individual Donations})$ and $\ln(\text{Initial PF Grants})$, suggesting a crowding out effect. Interestingly, I find a negative association between $\ln(\text{Government Grants})$ and $\ln(\text{Individual Donations})$, suggesting a crowding out effect and a positive association between $\ln(\text{Government Grants})$ and $\ln(\text{Initial PF Grants})$, suggesting a crowding in effect. My z-tests suggest that individual donor's response is stronger to *Org Age*, $\ln(\text{CEO Compensation})$, $\ln(\text{Total Assets})$, and *Professional Accounting Fees* than that of private foundations. I find that private foundations respond stronger to $\ln(\text{Fundraising Expense})$, *Single Audit*, *Indirect Support*, and $\ln(\text{Program Service Revenue})$ than individual donors. As individual

donors and private foundations respond in different directions to $\ln(\text{Government Grants})$, the z-test is not very informative.

Alternative Analysis

In Table 5, I report results of the probit regression model with the likelihood of receiving an initial private foundation grant, *Initial PF Grant Ind*, as the dependent variable. *Initial PF Grant Ind* is an indicator variable equal to one if the organization receives any amount of initial private foundation grants, and zero otherwise. This specification is used to isolate the association between the variables of interest and the likelihood of receiving an initial private foundation grant. I find that the likelihood of receiving an initial private foundation grant is positively associated with *Program Ratio* and *Governance*, and negatively associated with *Predicted Vulnerability*, consistent with my findings in Table 4, Column 2. This suggests that private foundations rely on these measures of organizational performance and governance in determining whether or not to give a grant.

In Table 6, I report results for the SUR model with the conditional sample. The conditional sample only includes organizations who received a government grant in year t , thus suggesting a baseline level of quality. In Column 1, I find that $\ln(\text{Individual Donations})$ remains significantly associated with *Predicted Vulnerability* and *Governance*, but is no longer associated with *Program Ratio*. These findings suggest that beyond a baseline level of quality, individual donors continue to respond to lower financial vulnerability and good governance, but stop responding to efficiency. In Column 2, I find that $\ln(\text{Initial PF Grants})$ remains associated with *Program Ratio*, *Predicted Vulnerability*, and *Governance*. Consistent with the results in the main analysis, the z-tests suggest that private foundations respond more strongly to *Program Ratio*, *Predicted Vulnerability*, and *Governance* than individual donors, conditional on a baseline level

of quality. The coefficients and z-tests of the control variables in the conditional sample are largely consistent with those in the full sample.

In Table 7, I report results for the SUR model where I restrict the initial private foundation grants considered to those that come from the largest quintile of private foundations. I argue this creates a test of equivalence between individual donors and the *most sophisticated* private foundations, as the largest foundations likely have the most sophisticated grantmaking processes. I find that sophisticated private foundations still respond more strongly to *Predicted Vulnerability* than individual donors, consistent with my other analysis. Interestingly, I find that individual donors appear to respond more strongly to *Program Ratio* and *Governance* than sophisticated private foundations.

Summary of Findings

Overall, my findings suggest that private foundations respond more strongly to efficiency, financial vulnerability, and governance. One possible explanation of this is that private foundations, as sophisticated donors, are more likely to examine and respond to accounting reports. My analysis provides two reasons why this salience effect is likely not the only driver of the differences I identify. First, if salience was the only driver, I would likely find a stronger response from private foundations to each of the control variables as well. Because I find that individual donors respond more strongly to some of the control variables, it is likely that at least some of the difference is driven by the preferences of these donor groups in the measures they use in their giving decision-making. Second, if salience was the only driver of the difference, I would likely find that the differences in responses to efficiency, financial vulnerability, and governance are largest when examining the most sophisticated private

foundations. I find the opposite - sophisticated private foundations appear to respond less strongly to efficiency and governance than individual donors.

These lead me to believe I am also likely capturing differences in the preferences of private foundations and individual donors in which organizational measures they use in their giving decision-making. Ultimately, the nuance in how much of the difference I identify is salience and how much is preferences is difficult to disentangle, and an avenue for future research.

Conclusion

This study has implications for the donation demand model literature, as it examines differences in how sophisticated and novice donors utilize organizational performance and governance measures in their giving decision-making. I find that institutional donors respond more strongly to efficiency, financial vulnerability, and governance than individual donors, though more sophisticated institutional donors are less reliant on efficiency and governance. In addition, the usage of 990-PF grant disclosure data to partition on donor sophistication I introduce in this study offers a superior approach to examining donor sophistication than prior methods, useful for future research. Finally, as this is the first study to examine the association between a large sample of private foundation grants and organization accounting reports, my findings may be of use to regulators, private foundations, organizations seeking grants, and others concerned with private philanthropy.

My study is subject to several limitations. One limitation is that the E-Filer database does not include every 990-PF filed during my sample period. In 2017, about 55% of private foundation total assets filed electronically, so roughly half of the total private foundation grants distributed during my sample cannot be identified, and thus, removed from public donations. A

second, related limitation is that data errors in the matching of grantee names to the BMF may not capture all private foundation grants to 501(c)(3) organizations. I note that these data issues should bias *against* finding a difference between initial private foundation grants and individual donations, as some private foundation grants are categorized as individual donations in my study.¹⁴ Third, while I argue private foundations are an example of a sophisticated donor, they may not be representative of all sophisticated donors. For example, some wealthy individuals may make sophisticated donations without the usage of a private foundation, such as through a Donor Advised Fund. Despite this limitation, I argue that the proposed partition on donor sophistication used in this study (individual vs. institutional donors) is superior to prior partitions. Finally, it is possible that my results are driven by differences in the organizations that seek out private foundation grants and those that do not. I partially address this limitation by controlling for fundraising expenses and by specifying a model that is conditional on the organization receiving a government grant.

Future research may examine explicit differences in how individual and institutional donors respond to other aspects of organizational performance and governance, such as audit findings and executive compensation. Researchers may examine institutional donors in greater detail, such as how institutional donors utilize accounting information in their grant-making process, or how government grantors and private foundations compare. Another avenue for future research is an examination of the crowding out/in of individual donations by private foundation grants, an extension of the crowding out/in literature.

¹⁴ Future research will be able to remove a more comprehensive list of private foundation grants from donations due to the 2019 Taxpayer First Act, making the individual donations variable as novice as possible. This may lead to larger differences in the responses of individual donors and private foundations when the individual donations variable includes fewer private foundation grants.

Table 2.1 Sample Selection

Panel A: Private Foundation Grants Data		Grants
Open990 Grants File		7,099,516
Dropped for future period		(199,785)
Dropped for same grantee-grantor-year		(1,371,753)
Dropped for known non-501(c)(3) recipient		(580,063)
Dropped for no name match		(1,884,916)
Total Private Foundation Grants to Nonprofits		3,062,999
Dropped for subsequent grant		(1,537,503)
Dropped for unique grants < 5		(55,696)
Final Sample of Initial Private Foundation Grants to Nonprofits		1,525,496
Panel B: Organization Data	PF Grant Recipients	Non-PF Grant Recipients
Open990 Governance File	228,790	1,504,800
Dropped for data quality	(9,761)	(694,653)
Dropped for missing data	(145,976)	(682,213)
Final Sample for Analysis	73,053	127,934

Table 2.2 Private Foundation Grants by Industry

Industry	Total Amount	%
Education	20,790,306,403	0.28
International, Foreign Affairs, and National Security	8,201,729,709	0.11
Arts, Culture, and Humanities	7,803,050,106	0.10
Philanthropy, Voluntarism, and Grantmaking Foundations	7,416,014,203	0.10
Health	4,731,968,828	0.06
Human Services - Multipurpose and Other	4,293,451,985	0.06
Environmental Quality, Protection, and Beautification	3,069,629,135	0.04
Animal-Related	3,069,629,135	0.04
Community Improvement, Capacity Building	2,527,818,170	0.03
Public, Society Benefit - Multipurpose and Other	1,372,226,975	0.02
Medical Research	1,201,635,123	0.02
Recreation, Sports, Leisure, Athletics	1,099,535,709	0.01
Civil Rights, Social Action, Advocacy	1,076,390,492	0.01
Youth Development	1,022,736,697	0.01
Housing, Shelter	974,033,498	0.01
Science and Technology Research Institutes, Services	898,314,609	0.01
Crime, Legal Related	856,926,101	0.01
Food, Agriculture, and Nutrition	808,253,279	0.01
Diseases, Disorders, Medical Disciplines	804,202,068	0.01
Social Science Research Institutes, Services	767,541,874	0.01
Religion Related, Spiritual Development	746,353,297	0.01
Mental Health, Crisis Intervention	668,226,267	0.01
Employment, Job Related	553,387,498	0.01
Public Safety	96,942,990	0.00
Unknown	38,634,795	0.00
Mutual/Membership Benefit Organizations, Other	31,705,116	0.00

Table 2.3 Descriptive Statistics

Panel A: Initial PF Grant Recipients					
Variable	n	Mean	Median	Min	Max
<i>Individual Donations</i> _{<i>i,t</i>}	73,053	2,888,879	1,142,843	0	11,200,000
<i>Initial Private Foundation Grants</i> _{<i>i,t</i>}	73,053	21,519	6,500	1	88,414
<i>Program Ratio</i> _{<i>i,t-1</i>}	73,053	0.80	0.82	0.00	1.00
<i>Predicted Vulnerability</i> _{<i>i,t-1</i>}	73,053	0.12	0.11	0.03	0.46
<i>Governance</i> _{<i>i,t-1</i>}	73,053	13.80	14.00	6.00	16.00
<i>Ln(CEO Compensation)</i> _{<i>i,t-1</i>}	73,053	11.85	11.85	7.11	13.90
<i>Ln(Total Assets)</i> _{<i>i,t-1</i>}	73,053	15.77	15.75	0.00	19.46
<i>Ln(Fundraising Expense)</i> _{<i>i,t-1</i>}	73,053	10.81	12.07	0.00	14.00
<i>Org Age</i> _{<i>i,t-1</i>}	73,053	47	37	1	139
<i>Single Audit</i> _{<i>i,t-1</i>}	73,053	0.19	0.00	0.00	1.00
<i>Indirect Support</i> _{<i>i,t-1</i>}	73,053	0.17	0.00	0.00	1.00
<i>Professional Accounting Fees</i> _{<i>i,t-1</i>}	73,053	0.83	1.00	0.00	1.00
<i>Ln(Program Service Revenue)</i> _{<i>i,t-1</i>}	73,053	10.65	12.77	0.00	18.75
<i>Ln(Government Grants)</i> _{<i>i,t-1</i>}	73,053	6.74	8.76	0.00	16.25
Panel B: Non-PF Grant Recipients					
Variable	n	Mean	Median	Min	Max
<i>Individual Donations</i> _{<i>i,t</i>}	127,934	447,531	73,925	0	11,200,000
<i>Initial Private Foundation Grants</i> _{<i>i,t</i>}	127,934	0	0	0	0
<i>Program Ratio</i> _{<i>i,t-1</i>}	127,934	0.74	0.84	0.00	1.00
<i>Predicted Vulnerability</i> _{<i>i,t-1</i>}	127,934	0.13	0.12	0.02	0.53
<i>Governance</i> _{<i>i,t-1</i>}	127,934	12.26	13.00	6.00	16.00
<i>Ln(CEO Compensation)</i> _{<i>i,t-1</i>}	127,934	11.18	11.32	7.11	13.90
<i>Ln(Total Assets)</i> _{<i>i,t-1</i>}	127,934	14.31	14.19	0.00	19.46
<i>Ln(Fundraising Expense)</i> _{<i>i,t-1</i>}	127,934	3.87	0.00	0.00	14.00
<i>Org Age</i> _{<i>i,t-1</i>}	127,934	42	34	1	139
<i>Single Audit</i> _{<i>i,t-1</i>}	127,934	0.10	0.00	0.00	1.00
<i>Indirect Support</i> _{<i>i,t-1</i>}	127,934	0.08	0.00	0.00	1.00
<i>Professional Accounting Fees</i> _{<i>i,t-1</i>}	127,934	0.77	1.00	0.00	1.00
<i>Ln(Program Service Revenue)</i> _{<i>i,t-1</i>}	127,934	10.56	12.65	0.00	18.75
<i>Ln(Government Grants)</i> _{<i>i,t-1</i>}	127,934	4.96	0.00	0.00	16.25

Table 2.4 Seemingly Unrelated Regression Results – Performance and Governance – Full Sample

Dependent Variables:	(1)	(2)	SUR z-test	
	<i>Ln(Individual Donations)_{i,t-1}</i>	<i>Ln(Initial PF Grants)_{i,t}</i>	Difference	p-value
<i>Program Ratio_{i,t-1}</i>	0.340*** (17.76)	0.560*** (15.81)	-0.221	0.000 ***
<i>Predicted Vulnerability_{i,t-1}</i>	-0.686*** (-6.34)	-2.650*** (-13.20)	1.963	0.000 ***
<i>Governance_{i,t-1}</i>	0.042*** (21.59)	0.079*** (22.05)	-0.037	0.000 ***
<i>Ln(CEO Compensation)_{i,t-1}</i>	0.342*** (71.64)	0.278*** (31.34)	0.064	0.000 ***
<i>Ln(Total Assets)_{i,t-1}</i>	0.311*** (114.12)	0.299*** (59.35)	0.011	0.031 **
<i>Ln(Fundraising Expense)_{i,t-1}</i>	0.181*** (217.98)	0.322*** (208.82)	-0.141	0.000 ***
<i>Org Age_{i,t-1}</i>	0.001*** (3.97)	0.000 (-1.08)	0.001	0.002 ***
<i>Single Audit_{i,t-1}</i>	0.306*** (21.83)	0.505*** (19.42)	-0.199	0.000 ***
<i>Indirect Support_{i,t-1}</i>	0.262*** (19.25)	0.487*** (19.28)	-0.225	0.000 ***
<i>Professional Accounting Fees_{i,t-1}</i>	-0.074*** (-7.30)	0.008 (0.42)	-0.085	0.000 ***
<i>Ln(Program Service Revenue)_{i,t-1}</i>	-0.064*** (-81.28)	-0.069*** (-47.22)	0.005	0.001 ***
<i>Ln(Government Grants)_{i,t-1}</i>	-0.003*** (-4.48)	0.016*** (11.54)	-0.019	0.000 ***
Constant	2.341*** (29.04)	-6.716*** (-44.92)		
Industry Fixed Effects	Yes	Yes		
State Fixed Effects	Yes	Yes		
Year Fixed Effects	Yes	Yes		
Control Group (Non-Grant Recipients)	Yes	Yes		
N	200,987	200,987		
R ²	0.501	0.408		

t statistics in parentheses; * p<.10, ** p<.05, *** p<.01

Table 2.5 Probit Regression Results – Initial Private Foundation Grant Indicator

Dependent Variables:	Initial PF Grant Ind_{i,t}
<i>Program Ratio</i> _{i,t-1}	0.558*** (25.71)
<i>Predicted Vulnerability</i> _{i,t-1}	-1.027*** (-10.69)
<i>Governance</i> _{i,t-1}	0.046*** (25.27)
<i>Ln(CEO Compensation)</i> _{i,t-1}	0.123*** (25.55)
<i>Ln(Total Assets)</i> _{i,t-1}	0.109*** (41.28)
<i>Ln(Fundraising Expense)</i> _{i,t-1}	0.124*** (167.70)
<i>Org Age</i> _{i,t-1}	-0.001*** (-7.37)
<i>Single Audit</i> _{i,t-1}	0.112*** (9.57)
<i>Indirect Support</i> _{i,t-1}	0.212*** (19.36)
<i>Professional Accounting Fees</i> _{i,t-1}	0.002 (0.27)
<i>Ln(Program Service Revenue)</i> _{i,t-1}	-0.032*** (-47.03)
<i>Ln(Government Grants)</i> _{i,t-1}	0.005*** (7.95)
Constant	-4.755*** (-58.50)
Industry Fixed Effects	
State Fixed Effects	Yes
Year Fixed Effects	Yes
Control Group (Non-Grant Recipients)	Yes
N	200,924
R ²	0.362
t statistics in parentheses; * p<.10, ** p<.05, *** p<.01	

Table 2.6 Seemingly Unrelated Regression Results – Performance and Governance – Conditional Sample

Dependent Variables:	(1)	(2)	SUR z-test		
	<i>Ln(Individual Donations)_{i,t}</i>	<i>Ln(Initial PF Grants)_{i,t}</i>	Difference	p-value	
<i>Program Ratio_{i,t-1}</i>	-0.023 (-0.59)	0.235*** (2.94)	-0.259	0.001	***
<i>Predicted Vulnerability_{i,t-1}</i>	-0.767*** (-4.47)	-2.274*** (-6.57)	1.507	0.000	***
<i>Governance_{i,t-1}</i>	0.057*** (18.09)	0.099*** (15.56)	-0.042	0.000	***
<i>Ln(CEO Compensation)_{i,t-1}</i>	0.304*** (34.78)	0.293*** (16.67)	0.010	0.558	
<i>Ln(Total Assets)_{i,t-1}</i>	0.351*** (77.32)	0.338*** (36.97)	0.013	0.164	
<i>Ln(Fundraising Expense)_{i,t-1}</i>	0.175*** (143.65)	0.334*** (136.18)	-0.159	0.000	***
<i>Org Age_{i,t-1}</i>	0.003*** (12.09)	0.002*** (3.99)	0.001	0.044	**
<i>Single Audit_{i,t-1}</i>	0.279*** (17.86)	0.450*** (14.29)	-0.171	0.000	***
<i>Indirect Support_{i,t-1}</i>	0.295*** (17.55)	0.493*** (14.51)	-0.197	0.000	***
<i>Professional Accounting Fees_{i,t-1}</i>	-0.060*** (-4.04)	0.048 (1.58)	-0.108	0.000	***
<i>Ln(Program Service Revenue)_{i,t-1}</i>	-0.043*** (-34.66)	-0.049*** (-19.82)	0.007	0.008	***
<i>Ln(Government Grants)_{i,t-1}</i>	0.006*** (3.28)	0.006 (1.60)	0.000	0.976	
Constant	1.881*** (15.69)	-7.643*** (-31.63)			
Industry Fixed Effects	Yes	Yes			
State Fixed Effects	Yes	Yes			
Year Fixed Effects	Yes	Yes			
Control Group (Non-Grant Recipients)	No	No			
N	87,431	87,431			
R ²	0.538	0.424			

t statistics in parentheses; * p<.10, ** p<.05, *** p<.01

Table 2.7 Seemingly Unrelated Regression Results – Performance and Governance – Large Foundation Sample

Dependent Variables:	(1)	(2)	SUR z-test	
	$Ln(\text{Individual Donations})_{i,t}$	$Ln(\text{Initial PF Grants})_{i,t}$	Difference	p-value
<i>Program Ratio</i> _{<i>i,t-1</i>}	0.340*** (17.76)	0.222*** (7.75)	0.118	0.000 ***
<i>Predicted Vulnerability</i> _{<i>i,t-1</i>}	-0.686*** (-6.34)	-1.681*** (-10.37)	0.995	0.000 ***
<i>Governance</i> _{<i>i,t-1</i>}	0.042*** (21.59)	0.014*** (4.97)	0.027	0.000 ***
<i>Ln(CEO Compensation)</i> _{<i>i,t-1</i>}	0.342*** (71.64)	0.189*** (26.46)	0.153	0.000 ***
<i>Ln(Total Assets)</i> _{<i>i,t-1</i>}	0.311*** (114.12)	0.220*** (54.00)	0.091	0.000 ***
<i>Ln(Fundraising Expense)</i> _{<i>i,t-1</i>}	0.181*** (217.98)	0.161*** (129.22)	0.020	0.000 ***
<i>Org Age</i> _{<i>i,t-1</i>}	0.001*** (3.97)	0.003*** (11.64)	-0.002	0.000 ***
<i>Single Audit</i> _{<i>i,t-1</i>}	0.306*** (21.83)	0.276*** (13.15)	0.030	0.201
<i>Indirect Support</i> _{<i>i,t-1</i>}	0.262*** (19.25)	0.255*** (12.48)	0.008	0.736
<i>Professional Accounting Fees</i> _{<i>i,t-1</i>}	-0.074*** (-7.30)	0.025* (1.69)	-0.099	0.000 ***
<i>Ln(Program Service Revenue)</i> _{<i>i,t-1</i>}	-0.064*** (-81.28)	-0.048*** (-40.38)	-0.016	0.000 ***
<i>Ln(Government Grants)</i> _{<i>i,t-1</i>}	-0.003*** (-4.48)	-0.002 (-1.41)	-0.002	0.156
Constant	2.341*** (29.04)	-4.703*** (-38.97)		
Industry Fixed Effects	Yes	Yes		
State Fixed Effects	Yes	Yes		
Year Fixed Effects	Yes	Yes		
Control Group (Non-Grant Recipients)	Yes	Yes		
N	200,987	200,987		
R ²	0.501	0.238		

t statistics in parentheses; * p<.10, ** p<.05, *** p<.01

CHAPTER 3: INSTITUTIONAL AND NOVICE DONOR RESPONSES TO CEO COMPENSATION DISCLOSURES

Introduction

As donations are the lifeblood of most nonprofit organizations, donor response to various levels of organizational corporate governance is an important issue for nonprofit organizations. Corporate governance refers to the set of internal and external mechanisms designed to ensure managers are acting in the best interest of the organization's mission (Harris et al. 2015). Nonprofit organizations are characterized by agency problems arising from managers not owning part of the organization and having incentives to misappropriate funds (Steinberg 1990; Fama and Jensen 1983a), with boards and funders acting as potential monitors (Brickley et al. 2010; Fisman and Hubbard 2003). Executive compensation is an important aspect of governance, and studies in the corporate literature suggest high executive compensation is associated with greater agency problems and weaker governance structures (Carter et al. 2016; Core et al. 1999).

Nonprofit organizations face difficult choices in determining appropriate executive compensation. While some experts argue that relatively low wages for nonprofit (compared to corporate) managers lead to self-selection of individuals who focus more for charitable mission than personal gain (Handy and Katz 1998), others suggest nonprofits must compensate executives similarly to for-profit firms to attract talent (Pallotta 2013; Pallotta 2021). Media reports make it clear that nonprofit donors are concerned with high amounts of executive compensation, and prior research provides some evidence that donors respond to high

CEO compensation by reducing future donations (Balsam and Harris 2014).¹⁵ What donors perceive to be appropriate compensation for a nonprofit CEO may be influenced by CEO characteristics, such as their gender. In this study, I expand the literature with a more precise partition on donor sophistication (individual vs. institutional donors) and examine gender biases in donor response to compensation disclosures.

I utilize a sample derived from the E-Filer database to examine the association between CEO compensation and future donations and grants.¹⁶ While Form 990 (990) only distinguishes between donations from the general public and government grants, I use grant disclosures from private foundation 990-PF filings to, for the first time, separate donations from the general public into donations from individuals and private foundations. This allows me to investigate and compare three donor groups: individual (novice) donors, government grantors (institutional), and private foundations (institutional), as I argue they are likely distinct in their response to CEO compensation. I also examine if these donor groups exhibit gender biases in their response to high levels of CEO compensation.

In contrast to the findings of Balsam and Harris (2014), I find strong evidence that individual donors respond negatively to CEO compensation. I also examine the response of private foundations and government grantors to CEO compensation. I find a positive association between CEO compensation and future private foundation and government grants, potentially driven by CEO skill in grant acquisition being positively associated with CEO compensation or grantors using CEO compensation as a signal for quality. I find no evidence of a gender bias in individual or institutional giving.

¹⁵ Balsam and Harris (2014) study media disclosures directly and include an example media disclosure in Appendix A of their paper.

¹⁶ The E-Filer database includes electronically filed Form 990 and Form 990-PF.

This paper makes two primary contributions to the literature. First, I clarify prior findings regarding donor response to CEO compensation disclosures. Specifically, in disentangling individual donations and private foundation grants from public donations, I identify a negative donor response by individual donors to CEO compensation. The positive association between CEO compensation and institutional giving (private foundations and government grantors) has several potential explanations, potentially disentangled by future analysis. Second, this is the first study to investigate potential biases in individual and institutional giving. I find no evidence that individual and institutional donors exhibit any gender bias in their giving.

Background and Prior Literature

How should nonprofits compensate their CEOs?

Nonprofits face competing incentives on how much to pay executives. Nonprofits are characterized by the non-distribution constraint, which states the organization cannot distribute excess revenues to managers or donors. Hansmann (1980) suggests donors are willing to give to nonprofit organizations due to the non-distribution constraint ensuring their donation is used for the charitable mission. If managers are earning high CEO compensation, the non-distribution constraint may be violated, potentially reducing community confidence in nonprofits, weakening the argument for tax exempt status, and making it difficult for donors to link donations to actual charitable good (Frumkin 2001). Donors and grantors may respond negatively to high levels of CEO compensation if they perceive it as a violation of the non-distribution constraint. Herzlinger (1994) argues the public expects nonprofit executives to earn less than corporate executives. Customers of for-profit corporations base their purchase decisions on the quality and price of the product, not the executive's compensation, but for nonprofit donors, the product is the delivery of services by the organization itself, which depends on its governance practices. Beyond donors

and grantors, regulators also appear to be concerned about high executive compensation. The 2008 changes to the 990 introduced many new governance disclosures, including policies related to the compensation of executives and key employees. For example, Part VI Line 15 requires disclosure on the process for determining executive compensation, including review and approval by independent persons, comparability data, and contemporaneous substantiation of the deliberation and decision. Failure to justify executive compensation may cause the IRS to investigate cases of nonprofit leadership with high compensation, which could result in fines related to the amount compensation and loss of 501(c)(3) status.¹⁷ The 2017 Tax Cuts and Jobs Act introduced IRC 4960, a 21 percent excise tax on nonprofit executive compensation greater than \$1 million, suggesting that regulators are attempting to curb high levels of nonprofit executive compensation. The threshold of \$1 million is likely based on section 162(m), which states for-profit corporations can only deduct up to \$1 million per year of compensation paid to senior executives. Despite pressure to drive down compensation, nonprofits must compete with each other and with the for-profit sector for executive talent, with the for-profit sector at an advantage due to their ability to offer higher salaries and stock compensation.

These competing incentives on executive compensation and regulatory changes have motivated a stream of literature that examines the determinants and consequences of nonprofit executive compensation. Prior literature has identified organizational size, composition of revenues, industry, efficiency, free cash flows, competition within the sector and governance as drivers of nonprofit CEO pay (Oster 1998; Baber et al. 2002; Frumkin and Keating 2010; Grasse et al. 2014; Balsam and Harris 2018). Finley et al. (2021) provide evidence of a gender pay gap in nonprofit organizations, finding that female executives are paid approximately 9% less than

¹⁷ In 2007, the IRS reported just \$4 million in aggregate fines for excessive compensation in public charities (IRS 2007).

male executives. Other studies examine donor response to executive compensation. Balsam and Harris (2014) find that donors respond negatively to media disclosures of executive compensation, but not compensation reported in the 990. They use the existence of restricted assets as a proxy for donor sophistication, and find that for organizations with restricted assets, a change in donations is negatively associated with 990 disclosures of executive compensation. Other studies use this partition of donor sophistication (Yetman and Yetman 2013b; Balsam and Harris 2018). I argue this is a weak proxy for donor sophistication as it assumes an organization's donor base is homogenous – either all sophisticated when restricted assets are reported or all novice when no restricted assets are reported. Additionally, some organizations allow for even small donations to be marked as restricted (e.g., The American Red Cross). An ideal donor sophistication partition is based on the donors themselves, which I use in this study. Balsam and Harris (2018) find that incentive pay (bonuses) are negatively associated with future donations and grants, despite being positively associated with future performance. While these studies provide a first-look at the association between donations and executive compensation, I expand the literature with a more precise partition on donor sophistication (individual vs. institutional donors) and examine gender biases in donor response to compensation disclosures.

Theory and Donor Behavior

Fama and Jensen (1983a) argue that agency problems arise in nonprofit organizations because external stakeholders (donors) provide funds to organizations and managers have incentives to expropriate those funds. Steinberg (1990) adds that the inability of managers to own parts of the organization creates incentives to shirk duties. Handy and Katz (1998) argue a different view: that agency problems are reduced by the self-selection of managers to low-paying nonprofit organizations. Much of the literature since has focused on the role of boards to mitigate

agency problems. Some provide evidence that increased board oversight lowers agency costs (Brickley et al. 2010; Callen et al. 2003). Fama and Jensen (1983b) however suggest that as nonprofit board members are insiders, they may not mitigate agency costs. Beyond board oversight, nonprofit funders may play a monitoring role (Fisman and Hubbard 2003). Gaver and Im (2014) suggest that external sources of funding from donors and grantors provide greater monitoring than internal sources such as program revenue and investment income. Prior studies have identified mechanisms through which funders monitor organizations and taken together suggest that the monitoring environment can be inferred from its funding sources (Gaver and Im 2014; Vermeer et al. 2006; Tate 2007; Olson 2000). In this study I examine donor responses to CEO compensation in nonprofit organizations, which may increase our understanding of how donors monitor the governance practices of nonprofit organizations, potentially mitigating an agency cost.

Donor behavior has been an important area of focus for researchers as organizations rely on donations to survive. The donation demand model literature refers to research that examines donor demand for charitable services, particularly how nonprofit donors respond to accounting reports when making giving decisions. Prior studies with donation demand models specify donations several different ways, depending on the particular line on the 990 used. The various approaches of prior literature introduce two problems. First, prior literature is highly inconsistent in specifying donations and grants, making it difficult to compare results across studies. Second, the use of donations from the general public (donations from individuals and private foundation grants) is a measure that includes donations from both novice and more financially savvy (sophisticated) donors. I propose partitioning donations and grants using three distinct variables: individual donations (novice donors and private funds), government grants (institutional donors

and public funds), and private foundation grants (institutional donors and private funds). This creates a more accurate partition on donor sophistication (individual donations vs. government grants and private foundation grants) and private/public funds (individual donations and private foundation grants vs. government grants). This allows me to investigate how donor sophistication affects the relationship between CEO compensation and future funding.

Hypothesis Development

I examine two primary research questions in this study. First, I seek to clarify prior literature on how different donor groups respond to CEO compensation. Balsam and Harris (2014) find no significance when examining the association between Form 990 compensation disclosures and future changes in public donations. However, their result may be driven by the mixed sophistication of public donations, as individual donors and private foundations may respond differently to compensation disclosures. I separate public donations into individual donations and private foundation grants and examine them separately. I also examine government grantors as another institutional donor group. In an experimental setting de Azevedo and Braga de Aguiar (2021) find that individual donors reduce donations to organizations in response to high compensation in the absence of third party endorsements. Yetman and Yetman (2013a) suggest that sophisticated donors have the incentive and ability to examine accounting reports. I argue that, relative to individual donors, institutional donors (private foundations and government grantors) meet this standard as they have the incentive (as they give large grants) and the ability (as they employ professional grantmaking staff) to examine accounting reports. Relative to institutional donors, individual donors are less likely to examine executive compensation disclosures in their giving decision-making, possibly weakening the observed donor response. Although, institutional donors may have a more sophisticated understanding of

nonprofit management and operations, and not view high levels of CEO compensation as necessarily bad. For example, institutional donors may view CEO compensation as a measure of organizational quality. This leads to my first set of hypotheses, each stated in the null:

HYPOTHESIS 1a: There is no association between individual donations and CEO compensation.

HYPOTHESIS 1b: There is no association between private foundation grants and CEO compensation.

HYPOTHESIS 1c: There is no association between government grants and CEO compensation.

A donor response to CEO compensation is likely based on their perception of appropriate compensation. This perception could be influenced by organizational or CEO characteristics. In this paper, I am particularly interested in examining if CEO gender plays a role in the perception of appropriate compensation. While CEO gender should have no bearing on a donor response to compensation disclosures, donors may not respond equally to highly paid male and female CEOs due to biases in their perception of appropriate levels of CEO compensation for nonprofit leaders. It is possible that donors exhibit bias against female CEOs due to sexism, believing that female CEOs should be paid less than male CEOs. Alternatively, it is possible donors exhibit bias against male CEOs due to perceiving female CEOs as more ethical, and high pay as evidence of unethical practices (Bernardi and Guptill 2008). Donors can retrieve information about the gender of the CEO from a variety of sources, including the 990 (Part VII and Schedule J include the name of the executive with the compensation information) and Guidestar (executive names are listed with their compensation). Media reports of nonprofit CEO compensation likely also often include the name of the CEO. Prior studies have suggested that gender bias exists in

board perceptions of CEOs (Sauls 2021). It is possible that if there exists a gender bias in donor responses to CEO compensation, different donor groups may respond differently. Individual donors are more likely to exhibit gender bias in their perceptions of CEO compensation as they are less sophisticated regarding financial information, while institutional donors may not exhibit gender bias due to their more sophisticated process of grantmaking. This leads to my second set of hypotheses, each stated in the null:

Hypothesis 2a: *Individual donors do not respond differently to CEO compensation by CEO gender.*

HYPOTHESIS 2b: *Private foundations do not respond differently to CEO compensation by CEO gender.*

HYPOTHESIS 2c: *Government grantors do not respond differently to CEO compensation by CEO gender.*

Research Design

To test my first set of hypotheses, I estimate the following regression model:

$$\begin{aligned}
 \text{Ln}(\text{Donations Measure})_{i,t+1} = & \beta_1 \text{Ln}(\text{CEO Compensation})_{i,t} + \beta_2 \text{Program Ratio}_{i,t} + \\
 & \beta_3 \text{Governance}_{i,t} + \beta_4 \text{Board Size}_{i,t} + \beta_5 \text{Board Size}^2_{i,t} + \beta_6 \text{Ln}(\text{Employees})_{i,t} + \\
 & \beta_7 \text{Ln}(\text{Total Assets})_{i,t} + \beta_8 \text{Ln}(\text{Org Age})_{i,t} + \beta_9 \text{Asset Tangibility}_{i,t} + \\
 & \beta_{10} \text{Commercial Dummy}_{i,t} + \beta_{11} \text{Ln}(\text{Fundraising Expense})_{i,t} + \\
 & \beta_{12} \text{Ln}(\text{Program Service Expense})_{i,t} + \beta_{13} \text{CEO Fundraising Efficiency}_{i,t} + \\
 & \beta_{14} \text{Ln}(\text{Donations Measure})_{i,t} + \Sigma \text{Year}_t + \Sigma \text{Industry}_k + \Sigma \text{State}_j + \varepsilon
 \end{aligned} \tag{1}$$

The three donations measures I examine are *Ln(Individual Donations)*, *Ln(Private Foundation Grants)*, and *Ln(Government Grants)*. Prior studies with donation demand models primarily examine donations as reported on 990 Part I Line 8 (Part VIII Line 1h), which includes all donations, grants, federated campaigns, membership dues, fundraising events, other cash gifts, and noncash contributions. Some studies remove government grants from this list and examine them separately. Another commonly used measure is Part VIII Line 1f, or public

support, which combines individual donations and private foundation grants (Balsam and Harris 2014; Amin and Harris 2020; Heutel 2012; Trussel and Parsons 2008; Okten and Weisbrod 2000). Overall, prior literature is inconsistent in specifying donations. I propose three donation variables: individual donations (public donations – private foundation grants), government grants, and private foundation grants (derived from 990-PF Part XV disclosures). A benefit of this partition is it allows me to separately examine individual and institutional (private foundations and government) giving.

Ln(CEO Compensation) is my primary variable of interest.¹⁸ *Program Ratio*, the share of total expenses directed toward programs, is a popular proxy for organizational efficiency, and has been shown to be associated with future donations (Weisbrod and Dominguez 1986; Okten and Weisbrod 2000; Posnett and Sandler 1989; Callen 1994; Tinkelman 1998; Khumawala and Gordon 1997; Trussel and Parsons 2008). *Governance* is an index measure of 16 governance measures reported on 990 Part VI, increasing in good governance (Bloch et al. 2020; Boland et al. 2020; Harris et al. 2015).¹⁹ I include *Board Size*, the number of independent board members, *Board Size*², and *Ln(Employees)*, the natural log of the number of employees, following (Finley et al. 2021; Carter et al. 2017). I control for size using *Ln(Total Assets)*, and *Org Age*, defined as the difference between the current year and the year of formation (Okten and Weisbrod 2000; Trussel and Parsons 2008; Posnett and Sandler 1989). I include *Asset Tangibility*, defined as the

¹⁸ Another approach to my research question is to utilize a predictive model and examine abnormal CEO compensation. In the nonprofit setting it is difficult to sufficiently control for CEO (and even firm) performance, which results in an abnormal measure mostly just capturing CEO performance. My current approach uses many control variables which ultimately make the examination of *Ln(CEO Compensation)* similar to an abnormal measure.

¹⁹ The included variables are increasing in good governance and include various policies (conflict of interest, whistleblower, document destruction, executive/officer salary approval, board/committee meeting minutes, and 990 review), relationships between officers, document changes, 990 accessibility on website, and material asset diversions. I code each of the 16 variables as 1 if the control is checked “Yes” and zero otherwise, then calculate a score that is the sum of these (ranging from 0 to 16).

ratio of net land, buildings and equipment to total assets, and *Commercial Dummy*, defined as 1 if the ratio of program service revenues to program service revenues + donations and grants is greater than 90%, following (Finley et al. 2021). As donations and grants are largely dependent on fundraising efforts, I include $\ln(\text{Fundraising Expense})$. To control for potential crowding out/in effects, I include $\ln(\text{Program Service Revenue})$ (Petrovits et al. 2011; Boland et al. 2020). I also include *CEO Fundraising Efficiency*, defined as the donations and grants generated by each dollar of CEO compensation, to control for CEO fundraising ability. Finally, I include the donations measure (in year t), effectively creating a change model. Year and industry fixed effects control for time trends and time-invariant differences between industries, respectively. I also include state fixed effects to control for differences in the demand for and supply of donation and grant funds among states. Because the E-filer database is an unbalanced panel, I cluster standard errors at the firm level to account for residual correlation among observations for the same firm (Balsam and Harris 2014). Donations measures are forward-looking one year because donors and grantors are likely examining prior-year 990s in their grant-making process. All continuous variables are winsorized at the 1st and 99th percentile to adjust for outliers.

Prior studies suggest that female CEOs self-select into certain organizations, which results in endogeneity when attempting to examine CEO gender (Finley et al. 2021; Carter et al. 2017). Those studies utilize an instrumental variable approach to examine the gender pay gap. In this particular setting, an instrumental variable approach is not possible as the instrument would have to be associated with the likelihood of a female CEO, whilst not being associated with donations to the organization. Thus, to attempt to examine my second set of hypotheses, I estimate the following model:

$$\begin{aligned} \Delta \ln(\text{Donations Measure})_{i,t \text{ to } t+1} = & \beta_1 \Delta \ln(\text{CEO Compensation})_{i,t-1 \text{ to } t} + \beta_2 \text{Gendered CEO} \\ & \text{Switch}_{i,t} + \beta_3 \Delta \ln(\text{CEO Compensation}) * \text{Gendered CEO Switch}_{i,t-1 \text{ to } t} + \\ & \beta_4 \Delta \text{Program Ratio}_{i,t-1 \text{ to } t} + \beta_5 \Delta \text{Governance}_{i,t-1 \text{ to } t} + \beta_6 \Delta \text{Board Size}_{i,t-1 \text{ to } t} + \\ & \beta_7 \Delta \text{Board Size}^2_{i,t-1 \text{ to } t} + \beta_8 \Delta \ln(\text{Employees})_{i,t-1 \text{ to } t} + \beta_9 \Delta \ln(\text{Total Assets})_{i,t-1 \text{ to } t} \quad (2) \\ & + \beta_{10} \ln(\text{Org Age})_{i,t} + \beta_{11} \Delta \text{Asset Tangibility}_{i,t-1 \text{ to } t} + \beta_{12} \Delta \ln(\text{Fundraising} \\ & \text{Expense})_{i,t-1 \text{ to } t} + \beta_{13} \Delta \ln(\text{Program Service Expense})_{i,t-1 \text{ to } t} + \Sigma \text{Year}_t + \\ & \Sigma \text{Industry}_k + \Sigma \text{State}_j + \varepsilon \end{aligned}$$

To attempt to correct for the aforementioned endogeneity, I use a changes model and limit the sample to CEO switches. By limiting the sample to CEO switches, I can compare gendered CEO switches (male to female and female to male switches) with non-gendered switches (male to male and female to female). This approach helps address much of the bias, as I am comparing organizations to themselves around CEO switches.²⁰ *Gendered CEO Switch* is an indicator variable for a female to male or male to female switch. The primary variable of interest is the interaction of $\Delta \ln(\text{CEO Compensation})$ and *Gendered CEO Switch*, which measures the change in the donations measures as a response to changes in CEO compensation for gendered CEO switches, relative to the control group of non-gendered CEO switches. Control variables are measured as changes from year t-1 to year t, except for $\ln(\text{Org Age})$, which is measured in year t.

Results

Sample Selection

Starting in 2010, the IRS began accepting electronically filed 990 and 990-PF, and in 2016 made the E-Filer database available as XML files through Amazon Web Services. Nonprofit organizations exceeding \$200,000 in revenues or exceeding \$500,000 in total assets are required to file a 990, while private foundations of all sizes are required to file a 990-PF. The

²⁰ One limitation of this approach is that endogeneity arising from organizations systematically choosing to switch from male to female or female to male CEOs could still be present.

990 includes governance, management, disclosure and financial (revenues, expenses and balance sheet) sections. The 990-PF includes these sections as well as detailed sections on investments and distributions of funds. The E-Filer database is of particular importance because it makes many fields from the 990 and 990-PF available in machine-readable format, increasing access to many previously-unavailable fields. In this setting, Part XV of the 990-PF is now available, which includes all grants distributed during the year, including the name of the grantee and the amount distributed. While access to the E-Filer database is free, it is difficult to access and use. Thus, I gather my sample from multiple datasets purchased from Open990. Open990 provides free, searchable information about U.S. nonprofit organizations, and sells large datasets derived from the E-Filer database for academic research.

I use the Open990 Governance file to gather financial and governance information on organization 990 filings. I then merge in executive compensation information from the Open990 Executive Compensation file, which includes executive-level information (name, title, and compensation) from 990 Part VII and Schedule J. To get private foundation grant data, I use the Open990 Grants dataset, which consists of 990-PF Part XV disclosures of grants distributed. Grants approved for future payment are also listed on Part XV, and are removed from my sample to avoid double-counting them once they are paid in a future period.²¹ I perform some data cleaning of the grantee name (capitalizing all letters and removing special characters and words like “association” and “international”), then perform a match of names and states with the National Center for Charitable Statistics (NCCS) Business Master File (BMF). Where a name and state match occurs, I then link the private foundation grant to the 990 data for the nonprofit organization using the EIN. In cases where a private foundation gives multiple grants to the same

²¹ The total number of grants marked as future pay account for only approximately 3 percent of total grants disclosed (167,750 of 5,929,046).

grantee in the same year, I aggregate those grants. I merge private foundation grants received with my organization-years dataset, and remove private foundation grants received from public donations, creating the individual donations variable.²² Importantly, this process allows me to distinguish between donations from individual and sophisticated (private foundations) public donors.

Table 1 reports sample selection, where I begin with 2,174,081 organization-year observations from the Open990.org Governance file from 2010-2021. I remove 39,519 observations that report negative values for donations measures or control variables. I remove 518,316 observations with missing, unknown, or mutual benefit industry codes, following Gaver and Im (2014). I then remove 843,814 observations that report less than \$30,000 in CEO compensation. To ensure the organizations I examine are reliant on donations, I impose a donations screen, similar to that of Yetman and Yetman (2013a), which requires organizations report greater than \$10,000 in donations and that donations represent greater than 10% of total revenues. A further 259,076 organizations are dropped for missing data. I end with 191,613 organization-year observations for my analysis.

Descriptive Statistics

Table 2 Panel A reports descriptive statistics for the full sample. Of note is that the E-Filer database includes a much larger spectrum of 990s relative to the datasets used by prior literature. Panel B compares the organizations in the top and bottom quintiles of CEO compensation, showing that organizations in the top quintile are much larger, generate more donation/grant revenue, report greater CEO fundraising efficiency and stronger governance, are more commercial, and are less efficient. Panel C separates the full sample by male and female

²² Only approximately half of private foundations electronically file, thus I am only able to identify approximately half of the true private foundation grants received.

CEOs, and shows that organizations run by male and female CEOs are quite different, as evidenced by significant t-tests across all variables. Organizations run by male CEOs are larger, more commercial, less efficient, pay higher compensation, and have larger boards.

Re-examination of Balsam and Harris (2014)

I begin my analysis by first re-examining the analysis conducted by Balsam and Harris (2014).²³ Table 3 Column 1 reports the results from Balsam and Harris (2014), who do not find an association between *Executive Compensation from 990* and the percentage change in direct public donations to the organization. When I use the same model with my sample, I find a negative and significant coefficient on *Executive Compensation from 990*, suggesting that donors overall do respond to CEO compensation reported on the 990. While I utilize the same model, the sample periods and sample sizes are very different. Their sample period is 2002-2007, and they utilize the NCCS Statistics of Income (SOI) file to gather 990 data, and Guidestar to gather executive compensation data. The SOI file includes all organizations with greater than \$50 million in total assets, and a stratified random sample of smaller organizations. My sample period of 2010-2020 is much more recent, and the E-Filer data includes all electronically-filed organizations, including smaller organizations not included in the SOI file. Thus, my sample size is substantially larger.

Next, I re-examine their partition on donor sophistication using the existence of restricted assets in Table 4. Columns 1 and 2 report their findings, where they find a negative coefficient on *Executive Compensation from 990* in their sample of organizations with restricted assets, and no result in their sample of organizations without restricted assets. They argue that this is evidence that only sophisticated donors respond to CEO compensation on the 990. Columns 3

²³ I cannot conduct a true replication of the analysis of Balsam and Harris (2014) as they purchased their compensation data from Guidestar and hand-collected the media disclosures they use in parts of their analysis.

and 4 report my findings when I utilize this partition with my sample, and I find a negative and significant coefficient for both groups (the coefficients are not statistically different, p -value=0.793).

Overall, my re-examination of the findings of Balsam and Harris (2014) suggests that the existence of restricted assets is not an ideal proxy for donor sophistication. I next use my proxy for donor sophistication, separately examining individual and institutional (private foundation and government) giving. In Table 5 Column 1, I find evidence that individual donors appear to respond negatively to *Executive Compensation from 990*. I then find a positive and significant result when examining the response of private foundations and government grants. I explore these findings in greater detail

Individual Donors

Table 6 reports the results of my test of H1a, where I examine the association between CEO compensation and future individual donations. I find a negative and significant coefficient on $\ln(\text{CEO Compensation})$, suggesting that individual donors respond negatively to CEO compensation, which is consistent with the results in Table 5.

I next split my sample into CEO compensation quintiles, as it is likely that the donor response to CEO compensation is non-linear. A donor response is likely concentrated at the highest levels of CEO compensation, and donors are unlikely to *reward* organizations that pay very little CEO compensation. Table 7 reports the association between $\ln(\text{CEO Compensation})$ and future individual donations, and I find that the overall negative association from Table 6 is driven by negative coefficients on $\ln(\text{CEO Compensation})$ in the second, third, and fifth quintiles. Interestingly, the coefficient on $\ln(\text{CEO Compensation})$ is positive in the first quintile, which is likely driven by an omitted correlated variable, CEO skill in fundraising, which may be

particularly strong in the bottom quintile of compensation.²⁴ While I control for CEO fundraising efficiency, it is possible that there are aspects of the CEOs skill in fundraising I am not controlling for. I reject the null for H1a.

Private Foundations

Table 8 reports the results of my test of H1b where I examine the association between CEO compensation and future private foundation grants. I find a positive and significant coefficient on $\ln(\text{CEO Compensation})$, which is surprising as it seems unlikely that private foundations respond to higher levels of compensation by increasing donations. Splitting the sample into quintiles of CEO Compensation (reported in Table 9) shows that this coefficient is concentrated in the bottom quintile. Thus, it appears the effect is driven not by a donor response, but by CEO skill in fundraising. I find no evidence of a negative response in the other quintiles of CEO compensation, so I fail to reject the null for H1b.

Government Grantors

Table 10 reports the results of my test of H1c, where I examine the association between CEO compensation and future government grants. The coefficient on $\ln(\text{CEO Compensation})$ is not statistically significant at the 0.05 level. Table 11 reports the results split by CEO compensation quintiles, and I find a positive coefficient in the first quintile. Like with private foundation grants, and individual donations, I argue this is likely driven by CEO skill in fundraising. I find a negative coefficient in the third quintile, which could be indicative of a donor response, however because I find no result in the fourth and fifth quintiles of CEO compensation, I fail to reject the null for H1c.

²⁴ Another potential explanation for a positive coefficient in the bottom quintile is donors viewing very low CEO compensation as a signal of organization quality.

CEO Gender Tests

Table 12 reports univariate analysis of the donor response to gendered CEO switches. I find that for female to male switches, it is more common for compensation to increase (3,560) than decrease (2,611), while for male to female switches, it is more common for compensation to decrease (4,031) than increase (3,202). This provides some indirect support for the existence of a gender pay gap in nonprofit organizations, consistent with the argument and findings of Finley et al. (2021). Comparing changes in donations measures around gendered CEO switches, differences are largely consistent across gendered CEO switches.

Table 13 reports the results of my tests of H2a-c, where I examine if there is a difference in how donors respond to the compensation of male and female CEOs. Across all of my donations measures, I find no significant coefficient on $\Delta \ln(\text{CEO Compensation})$. Even across CEO switches, changes in CEO compensation may still be relatively small. I do not find any significant association between my donations measures and *Gendered CEO Switch*, or the interaction term.²⁵ Thus, I fail to reject the null for H2a, H2b, and H2c. The usage of the full changes model (restricting variation to the firm level), while it addresses self-selection bias, may not allow for sufficient variation to find a gender bias in donor giving.

Conclusion

Regarding my first set of hypotheses, I find evidence of donor responses to CEO compensation. Individual donors appear to respond negatively to high levels of CEO compensation, while I find no evidence private foundations and government grantors do the same. My findings contrast strongly with those of Balsam and Harris (2014), as their findings

²⁵ I also run this analysis with dependent variables measured as the change from t-1 to t+1, and control variables measured from t-2 to t. Results are insignificant.

suggest that unsophisticated donors do not respond to executive compensation disclosures, while sophisticated donors respond negatively. They utilize the existence of restricted assets as a proxy for donor sophistication, which I argue is weak relative to my usage of individual donors and private foundations as proxies for sophistication. Differences in model and sample period and size may explain these differences. Overall, I argue my approach is more precise in examining how sophistication influences how donors respond to compensation disclosures.

Private foundation and government grants are either positively or not associated with CEO compensation, and I find strong positive associations between CEO compensation and future private foundation and government grants when I examine the lowest quintile of CEO compensation. The positive associations found are possibly driven by grantors using CEO compensation as a signal for quality at lower levels or CEO skill in grant acquisition being positively associated with CEO compensation. Future research may disentangle these various influences and explicitly identify a grantor response to CEO compensation.

Regarding my second set of hypotheses, I find no evidence that individual or institutional donors change their response to CEO compensation due to the gender of the CEO. Ultimately, the endogeneity challenges of examining CEO gender in this setting require a very robust econometric approach (CEO switches and a full changes model), which may be obscuring any real effect.

This paper contributes to the donation demand model literature by documenting differences in how different donor groups respond to CEO compensation. Importantly, as high levels of CEO compensation are indicative of agency problems, my findings suggest that individual (small) donors act as external monitors of agency problems by reducing donations in response to high compensation. My findings may be useful to nonprofit organizations setting

executive compensation levels. If organizations are concerned that hiring a high quality CEO for a larger total compensation will cause donor backlash, my findings suggest this backlash may be largely contained to individual donors.²⁶

My findings are subject to a few limitations. First, the E-Filer dataset only includes around half of all 990-PFs. This results in around half of private foundation grants being categorized as individual donations. Ultimately, this biases against finding differences between individual and private foundation giving. This limitation will be corrected with newer data, as 990 and 990-PF filings with tax years beginning after July 1, 2019 are required to be electronically filed due to the 2019 Taxpayer First Act. Another limitation is that while I argue partitioning donors into individual v. private foundation/government is a better proxy for donor sophistication, it is not perfect. Some wealthy individuals may make sophisticated donations without the usage of a private foundation, such as through a Donor Advised Fund, which are becoming more popular. Future research in this area may utilize an experimental design to further examine biases in the donor response to compensation.

²⁶ Although, if the higher level of compensation leads to a media report, BH14 show that this will lead to a significant reduction in future public donations and government grants.

Table 3.1 Sample Selection

	n
Org-Year observations from Open990 Governance file	2,174,081
Dropped for Negative Variables	(39,519)
Dropped for Industry (mutual benefit, missing, unknown)	(518,316)
Dropped for CEO Compensation < \$30,000	(843,814)
Dropped for Donations < \$10,000 or < 10% Total Revenue	(321,743)
Dropped for Missing Data	(259,076)
Sample for Final Analysis	191,613

Table 3.2 Descriptive Statistics

Panel A: Full Sample								
Variable	n	Mean	Std Dev	Min	p25	Median	p75	Max
<i>Ln(Individual Donations)_{t+1}</i>	191,613	6.37	5.77	0.00	0.00	8.52	11.59	16.33
<i>Ln(Private Foundation Grants)_{t+1}</i>	191,613	1.51	3.55	0.00	0.00	0.00	0.00	13.39
<i>Ln(Government Grants)_{t+1}</i>	191,613	5.08	6.65	0.00	0.00	0.00	12.78	16.29
<i>CEO Compensation_t</i>	191,613	207,868	206,687	30,000	86,290	138,954	238,925	1,075,176
<i>Ln(CEO Total Compensation)_t</i>	191,613	11.91	0.78	10.31	11.37	11.84	12.38	13.89
<i>Asset Tangibility_t</i>	191,613	0.32	0.30	0.00	0.03	0.25	0.57	0.99
<i>Board Size_t</i>	191,613	14.41	14.00	0.00	8.00	11.00	16.00	131.00
<i>Board Size²_t</i>	191,613	403	1,563	0	64	121	256	17,161
<i>CEO Fundraising Efficiency_t</i>	191,613	9.15	26.15	0.00	0.00	0.29	4.73	204.74
<i>Commercial Dummy_t</i>	191,613	0.61	0.49	0.00	0.00	1.00	1.00	1.00
<i>Governance_t</i>	191,613	12.76	2.42	6.00	12.00	14.00	15.00	16.00
<i>Ln(Employees)_t</i>	191,613	3.78	1.90	0.00	2.30	3.78	5.29	7.24
<i>Ln(Fundraising Expense)_t</i>	191,613	3.04	5.00	0.00	0.00	0.00	8.27	14.13
<i>Ln(Org Age)_t</i>	191,613	3.71	0.65	0.69	3.26	3.74	4.17	4.93
<i>Ln(Program Service Revenue)_t</i>	191,613	13.50	4.33	0.00	12.75	14.33	15.97	18.65
<i>Ln(Total Assets)_t</i>	191,613	15.26	2.14	0.00	13.75	15.18	16.71	19.63
<i>Program Ratio_t</i>	191,613	0.64	0.37	0.00	0.47	0.83	0.90	1.00
Panel B: CEO Compensation Quintiles								
Variable	n	Top Quintile		Bottom Quintile			Mean Difference	
		Mean	Median	n	Mean	Median	p-value	
<i>Ln(Individual Donations)_{t+1}</i>	38,322	7.23	9.99	38,324	5.47	7.38	1.76	0.000***
<i>Ln(Private Foundation Grants)_{t+1}</i>	38,322	2.62	0.00	38,324	0.60	0.00	2.02	0.000***
<i>Ln(Government Grants)_{t+1}</i>	38,322	5.14	0.00	38,324	4.85	0.00	0.29	0.000***
<i>CEO Compensation_t</i>	38,322	532,872	428,295	38,324	56,001	57,368	476,871	0.000***
<i>Ln(CEO Total Compensation)_t</i>	38,322	13.08	12.97	38,324	10.90	10.96	2.18	0.000***
<i>Asset Tangibility_t</i>	38,322	0.31	0.29	38,324	0.34	0.23	-0.03	0.000***
<i>Board Size_t</i>	38,322	18.29	14.00	38,324	11.35	9.00	6.95	0.000***
<i>Board Size²_t</i>	38,322	589	196	38,324	306	81	283	0.000***
<i>CEO Fundraising Efficiency_t</i>	38,322	8.16	0.22	38324.00	5.22	0.28	2.94	0.000***
<i>Commercial Dummy_t</i>	38,322	0.77	1.00	38,324	0.51	1.00	0.26	0.000***
<i>Governance_t</i>	38,322	13.83	14.00	38,324	11.40	12.00	2.43	0.000***
<i>Ln(Employees)_t</i>	38,322	5.26	5.61	38,324	2.47	2.48	2.79	0.000***
<i>Ln(Fundraising Expense)_t</i>	38,322	3.89	0.00	38,324	2.17	0.00	1.72	0.000***
<i>Ln(Org Age)_t</i>	38,322	3.91	3.97	38,324	3.50	3.56	0.41	0.000***
<i>Ln(Program Service Revenue)_t</i>	38,322	16.43	16.97	38,324	11.11	12.64	5.31	0.000***
<i>Ln(Total Assets)_t</i>	38,322	17.50	17.60	38,324	13.43	13.39	4.07	0.000***
<i>Program Ratio_t</i>	38,322	0.61	0.81	38,324	0.70	0.84	-0.09	0.000***

Panel C: Male v Female CEO		Male CEO			Female CEO			Mean Difference	
Variable	n	Mean	Median	n	Mean	Median	p-value		
<i>Ln(Individual Donations)_{t+1}</i>	115,552	5.98	7.12	76,061	6.97	9.21	-1.00	0.000***	
<i>Ln(Private Foundation Grants)_{t+1}</i>	115,552	1.49	0.00	76,061	1.55	0.00	-0.05	0.001***	
<i>Ln(Government Grants)_{t+1}</i>	115,552	4.62	0.00	76,061	5.77	0.00	-1.15	0.000***	
<i>CEO Compensation_t</i>	115,552	248,879	169,768	76,061	145,564	105,477	103,315	0.000***	
<i>Ln(CEO Total Compensation)_t</i>	115,552	12.10	12.04	76,061	11.63	11.57	0.47	0.000***	
<i>Asset Tangibility_t</i>	115,552	0.34	0.29	76,061	0.30	0.20	0.04	0.000***	
<i>Board Size_t</i>	115,552	15.33	12.00	76,061	13.01	11.00	2.33	0.000***	
<i>Board Size_t²</i>	115,552	475	144	76,061	295	121	179	0.000***	
<i>CEO Fundraising Efficiency_t</i>	115,552	8.17	0.15	76,061.00	10.64	0.62	-2.47	0.000***	
<i>Commercial Dummy_t</i>	115,552	0.65	1.00	76,061	0.55	1.00	0.11	0.000***	
<i>Governance_t</i>	115,552	12.75	14.00	76,061	12.78	14.00	-0.03	0.006***	
<i>Ln(Employees)_t</i>	115,552	3.93	4.01	76,061	3.56	3.53	0.36	0.000***	
<i>Ln(Fundraising Expense)_t</i>	115,552	2.85	0.00	76,061	3.32	0.00	-0.48	0.000***	
<i>Ln(Org Age)_t</i>	115,552	3.77	3.81	76,061	3.61	3.64	0.16	0.000***	
<i>Ln(Program Service Revenue)_t</i>	115,552	13.98	14.80	76,061	12.77	13.69	1.20	0.000***	
<i>Ln(Total Assets)_t</i>	115,552	15.64	15.58	76,061	14.69	14.59	0.96	0.000***	
<i>Program Ratio_t</i>	115,552	0.61	0.81	76,061	0.70	0.84	-0.09	0.000***	

Table 3.3 Balsam and Harris (2014) Re-Examination

	(1)	(2)
	BH14	S22
Dependent Variable:	%Δ Direct Donations$_{i,t-1}$ to $t+1$	
<i>Executive Compensation from 990$_t$</i>	-0.008	-0.028*** (-6.00)
<i>%Δ Program Ratio$_{t-2}$ to t</i>	.298*	0.006 (0.16)
<i>%Δ Fundraising Expense$_{t-2}$ to t</i>	.105***	0.087*** (4.96)
<i>%Δ Total Assets$_{t-2}$ to t</i>	-.167***	-0.006 (-0.33)
<i>%Δ Government Grants$_{t-2}$ to t</i>	.024*	0.049** (2.25)
<i>%Δ Program Service Revenue$_{t-2}$ to t</i>	-.037**	0.041*** (2.71)
<i>%Δ Other Revenue$_{t-2}$ to t</i>	-.002	-0.003 (-1.45)
Constant	.344***	0.934*** (3.59)
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes
<i>N</i>	5,067	159,200
<i>R</i> ² (overall)	0.009	0.009

t statistics in parentheses, * $p < .10$, ** $p < .05$, *** $p < .01$
 Note: Variable definitions listed in the appendix

Table 3.4 Balsam and Harris (2014) Re-Examination – Restricted Assets Partition

	(1)	(2)	(3)	(4)
	BH14	BH14	S22	S22
Sophistication Partition:	Restricted Assets = 1	Restricted Assets = 0	Restricted Donations = 1	Restricted Donations = 0
Dependent Variable:	%Δ Direct Donations$_{i,t-1}$ to $t+1$			
<i>Executive Compensation from 990$_t$</i>	-0.020**	0.108	-0.034*** (-4.16)	-0.025*** (-4.00)
<i>%Δ Program Ratio$_{t-2}$ to t</i>	0.341**	-0.125	0.016 (0.12)	0.001 (0.03)
<i>%Δ Fundraising Expense$_{t-2}$ to t</i>	0.103***	0.082	0.107*** (4.81)	0.036 (1.27)
<i>%Δ Total Assets$_{t-2}$ to t</i>	-0.183***	-0.137	-0.037 (-0.89)	0.005 (0.23)
<i>%Δ Government Grants$_{t-2}$ to t</i>	0.026*	-0.006	0.062** (2.12)	0.013 (0.39)
<i>%Δ Program Service Revenue$_{t-2}$ to t</i>	-0.039	-0.009	0.028 (1.07)	0.043** (2.34)
<i>%Δ Other Revenue$_{t-2}$ to t</i>	-0.003	0.000	-0.001 (-0.17)	-0.005* (-1.88)
Constant	0.449***	0.087	1.699*** (3.32)	0.350* (1.66)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes	Yes	Yes
<i>N</i>	4,644	423	56,658	102,542
<i>R</i> ² (overall)	0.011	0.043	0.005	0.013

t statistics in parentheses, * p<.10, ** p<.05, *** p<.01

Note: Variable definitions listed in the appendix

Table 3.5 Balsam and Harris (2014) Sophistication Changes

	(1)	(2)	(3)
Dependent Variable:	%Δ Individual Donations_{i,t-1 to t+1}	%Δ Private Foundation Grants_{i,t-1 to t+1}	%Δ Government Grants_{i,t-1 to t+1}
<i>Executive Compensation from 990_t</i>	-0.034*** (-7.55)	0.051*** (14.87)	0.006*** (7.91)
<i>%Δ Program Ratio_{t-2 to t}</i>	0.002 (0.05)	-0.009 (-0.70)	0.006 (0.97)
<i>%Δ Fundraising Expense_{t-2 to t}</i>	0.083*** (4.74)	0.063*** (5.33)	0.009*** (3.76)
<i>%Δ Total Assets_{t-2 to t}</i>	-0.003 (-0.15)	-0.007 (-1.00)	0.011*** (3.69)
<i>%Δ Government Grants_{t-2 to t}</i>	0.053** (2.45)	0.014 (1.09)	0.251*** (45.14)
<i>%Δ Program Service Revenue_{t-2 to t}</i>	0.035** (2.41)	0.001 (0.08)	-0.005** (-2.36)
<i>%Δ Other Revenue_{t-2 to t}</i>	-0.003 (-1.51)	-0.001 (-0.73)	0.000 (0.26)
Constant	0.783*** (3.29)	0.227** (2.13)	0.008 (0.23)
Industry Fixed Effects	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes	Yes
<i>N</i>	159,199	159,199	159,197
<i>R</i> ² (overall)	0.009	0.015	0.097

t statistics in parentheses, * p<.10, ** p<.05, *** p<.01

Note: Variable definitions listed in the appendix

Table 3.6 Individual Donor Response to CEO Compensation

Dependent Variable:	<i>Ln(Individual Donations)_{i,t+1}</i>
<i>Ln(CEO Compensation)_{i,t}</i>	-0.202*** (-13.44)
<i>Program Ratio_{i,t}</i>	0.652*** (25.08)
<i>Governance_{i,t}</i>	0.041*** (12.10)
<i>Board Size_{i,t}</i>	0.028*** (18.88)
<i>Board Size²_{i,t}</i>	-0.000*** (-17.45)
<i>Ln(Employees)_{i,t}</i>	0.173*** (25.06)
<i>Ln(Total Assets)_{i,t}</i>	0.027*** (4.32)
<i>Ln(Org Age)_{i,t}</i>	0.027** (2.04)
<i>Asset Tangibility_{i,t}</i>	0.108*** (4.06)
<i>Commercial Dummy_{i,t}</i>	-0.423*** (-21.77)
<i>Ln(Fundraising Expense)_{i,t}</i>	0.101*** (52.17)
<i>Ln(Program Service Revenue)_{i,t}</i>	0.001 (0.42)
<i>CEO Fundraising Efficiency_{i,t}</i>	0.001*** (3.47)
<i>Ln(Individual Donations)_{i,t}</i>	0.705*** (227.27)
Constant	4.538*** (24.14)
Industry Fixed Effects	Yes
State Fixed Effects	Yes
Year Fixed Effects	Yes
Cluster Standard Errors at Firm Level	Yes
<i>N</i>	191,613
<i>R</i> ² (overall)	0.815

t statistics in parentheses, * p<.10, ** p<.05, *** p<.01

Note: Variable definitions listed in the appendix

Table 3.7 Individual Donor Response to CEO Compensation by Quintile

Quintile of CEO Compensation:	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	<i>Ln(Individual Donations)_{i,t+1}</i>				
<i>Ln(CEO Compensation)_{i,t}</i>	0.197*** (3.11)	-0.410*** (-3.23)	-0.273** (-2.16)	-0.001 (-0.01)	-0.240*** (-5.69)
<i>Program Ratio_{i,t}</i>	0.537*** (9.68)	0.675*** (11.66)	0.583*** (10.27)	0.583*** (10.38)	0.698*** (11.19)
<i>Governance_{i,t}</i>	0.036*** (5.64)	0.058*** (8.34)	0.049*** (6.32)	0.045*** (5.66)	0.024** (2.42)
<i>Board Size_{i,t}</i>	0.030*** (7.72)	0.026*** (7.06)	0.026*** (7.86)	0.028*** (9.40)	0.024*** (8.12)
<i>Board Size²_{i,t}</i>	-0.000*** (-7.99)	-0.000*** (-7.12)	-0.000*** (-7.34)	-0.000*** (-8.29)	-0.000*** (-6.65)
<i>Ln(Employees)_{i,t}</i>	0.183*** (12.04)	0.210*** (14.02)	0.173*** (11.46)	0.135*** (8.70)	0.138*** (8.33)
<i>Ln(Total Assets)_{i,t}</i>	0.006 (0.49)	0.034** (2.36)	0.029** (2.00)	0.040*** (2.82)	0.047*** (2.98)
<i>Ln(Org Age)_{i,t}</i>	-0.029 (-0.95)	-0.048 (-1.64)	-0.062** (-2.24)	0.013 (0.48)	0.158*** (5.32)
<i>Asset Tangibility_{i,t}</i>	0.142*** (2.62)	0.109* (1.89)	0.089 (1.50)	0.147** (2.42)	0.292*** (4.21)
<i>Commercial Dummy_{i,t}</i>	-0.482*** (-10.98)	-0.455*** (-10.75)	-0.422*** (-9.72)	-0.411*** (-9.85)	-0.383*** (-8.77)
<i>Ln(Fundraising Expense)_{i,t}</i>	0.093*** (20.41)	0.097*** (23.46)	0.103*** (25.17)	0.099*** (23.88)	0.094*** (21.14)
<i>Ln(Program Service Revenue)_{i,t}</i>	-0.005 (-1.13)	0.003 (0.66)	0.002 (0.44)	0.001 (0.26)	0.01 (1.32)
<i>CEO Fundraising Efficiency_{i,t}</i>	0.001 (0.84)	0.001 (0.77)	0.001 (1.43)	0.001** (2.21)	0.001* (1.69)
<i>Ln(Individual Donations)_{i,t}</i>	0.678*** (102.09)	0.684*** (98.73)	0.703*** (102.35)	0.725*** (109.07)	0.737*** (108.25)
Constant	-0.893 (-1.11)	4.520*** (3.00)	0.000 (.)	1.823 (1.55)	3.239*** (4.64)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes	Yes	Yes	Yes
<i>N</i>	37,859	37,857	37,892	37,783	37,546
<i>R</i> ² (overall)	0.749	0.787	0.814	0.834	0.853

t statistics in parentheses, * *p*<.10, ** *p*<.05, *** *p*<.01

Note: Variable definitions listed in the appendix

Table 3.8 Private Foundation Response to CEO Compensation

Dependent Variable:	<i>Ln(Private Foundation Grants)_{i,t+1}</i>
<i>Ln(CEO Compensation)_{i,t}</i>	0.031*** (2.60)
<i>Program Ratio_{i,t}</i>	0.306*** (20.33)
<i>Governance_{i,t}</i>	0.001 (0.20)
<i>Board Size_{i,t}</i>	0.035*** (26.41)
<i>Board Size²_{i,t}</i>	-0.000*** (-25.63)
<i>Ln(Employees)_{i,t}</i>	0.081*** (15.84)
<i>Ln(Total Assets)_{i,t}</i>	0.085*** (17.79)
<i>Ln(Org Age)_{i,t}</i>	0.153*** (12.43)
<i>Asset Tangibility_{i,t}</i>	0.056** (2.34)
<i>Commercial Dummy_{i,t}</i>	-0.170*** (-9.37)
<i>Ln(Fundraising Expense)_{i,t}</i>	0.126*** (54.20)
<i>Ln(Program Service Revenue)_{i,t}</i>	0.011*** (5.24)
<i>CEO Fundraising Efficiency_{i,t}</i>	0.004*** (8.72)
<i>Ln(Private Foundation Grants)_{i,t}</i>	0.473*** (111.80)
Constant	3.120*** (17.50)
Industry Fixed Effects	Yes
State Fixed Effects	Yes
Year Fixed Effects	Yes
Cluster Standard Errors at Firm Level	Yes
<i>N</i>	191,613
<i>R</i> ² (overall)	0.615

t statistics in parentheses, * $p < .10$, ** $p < .05$, *** $p < .01$

Note: Variable definitions listed in the appendix

Table 3.9 Private Foundation Response to CEO Compensation by Quintile

Quintile of CEO Compensation:	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	<i>Ln(Private Foundation Grants)_{i,t+1}</i>				
<i>Ln(CEO Compensation)_{i,t}</i>	0.195*** (4.58)	0.138 (1.30)	0.181 (1.60)	-0.142 (-1.45)	-0.011 (-0.26)
<i>Program Ratio_{i,t}</i>	0.161*** (6.37)	0.149*** (5.37)	0.189*** (6.60)	0.214*** (6.07)	0.441*** (9.62)
<i>Governance_{i,t}</i>	0.013*** (2.88)	0.026*** (5.10)	0.016*** (2.80)	0.008 (1.27)	0.000 (0.01)
<i>Board Size_{i,t}</i>	0.015*** (6.03)	0.026*** (9.14)	0.022*** (8.43)	0.033*** (12.43)	0.041*** (13.66)
<i>Board Size²_{i,t}</i>	-0.000*** (-6.32)	-0.000*** (-9.37)	-0.000*** (-8.76)	-0.000*** (-12.28)	-0.000*** (-12.20)
<i>Ln(Employees)_{i,t}</i>	0.058*** (5.71)	0.085*** (7.61)	0.063*** (5.78)	0.083*** (6.20)	0.118*** (8.96)
<i>Ln(Total Assets)_{i,t}</i>	0.048*** (6.12)	0.084*** (7.81)	0.069*** (6.22)	0.074*** (5.98)	0.063*** (4.84)
<i>Ln(Org Age)_{i,t}</i>	-0.034 (-1.56)	0.016 (0.63)	0.081*** (3.29)	0.132*** (4.90)	0.271*** (8.89)
<i>Asset Tangibility_{i,t}</i>	0.05 (1.30)	0.094* (1.80)	0.007 (0.13)	-0.06 (-0.98)	0.296*** (4.38)
<i>Commercial Dummy_{i,t}</i>	-0.161*** (-5.27)	-0.144*** (-3.86)	-0.191*** (-4.75)	-0.258*** (-6.00)	-0.308*** (-6.24)
<i>Ln(Fundraising Expense)_{i,t}</i>	0.066*** (15.60)	0.103*** (21.99)	0.129*** (25.84)	0.151*** (28.27)	0.133*** (23.39)
<i>Ln(Program Service Revenue)_{i,t}</i>	0.006* (1.81)	0.007* (1.75)	0.013*** (2.68)	0.012** (2.21)	0.017** (2.54)
<i>CEO Fundraising Efficiency_{i,t}</i>	0.002* (1.71)	0.001 (0.92)	0.003*** (4.20)	0.004*** (5.14)	0.005*** (5.15)
<i>Ln(Private Foundation Grants)_{i,t}</i>	0.363*** (29.66)	0.398*** (40.22)	0.468*** (50.37)	0.489*** (56.41)	0.507*** (56.72)
Constant	-2.739*** (-5.04)	0.000 (.)	-3.738*** (-2.71)	4.954*** (4.18)	0.000 (.)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes	Yes	Yes	Yes
<i>N</i>	38,324	38,322	38,322	38,323	38,322
<i>R</i> ² (overall)	0.359	0.438	0.545	0.635	0.740

t statistics in parentheses, * p<.10, ** p<.05, *** p<.01

Note: Variable definitions listed in the appendix

Table 3.10 Government Response to CEO Compensation

(1)	
Dependent Variable:	<i>Ln(Government Grants)_{i,t+1}</i>
<i>Ln(CEO Compensation)_{i,t}</i>	0.021* (1.67)
<i>Program Ratio_{i,t}</i>	0.426*** (23.50)
<i>Governance_{i,t}</i>	0.029*** (10.17)
<i>Board Size_{i,t}</i>	0.006*** (5.39)
<i>Board Size²_{i,t}</i>	-0.000*** (-6.63)
<i>Ln(Employees)_{i,t}</i>	0.131*** (23.02)
<i>Ln(Total Assets)_{i,t}</i>	-0.037*** (-7.43)
<i>Ln(Org Age)_{i,t}</i>	-0.054*** (-4.94)
<i>Asset Tangibility_{i,t}</i>	0.067*** (2.83)
<i>Commercial Dummy_{i,t}</i>	-0.506*** (-20.92)
<i>Ln(Fundraising Expense)_{i,t}</i>	0.012*** (7.20)
<i>Ln(Program Service Revenue)_{i,t}</i>	-0.007*** (-3.35)
<i>CEO Fundraising Efficiency_{i,t}</i>	0.011*** (31.74)
<i>Ln(Government Grants)_{i,t}</i>	0.818*** (317.84)
Constant	-0.517*** (-3.27)
Industry Fixed Effects	Yes
State Fixed Effects	Yes
Year Fixed Effects	Yes
Cluster Standard Errors at Firm Level	Yes
<i>N</i>	191,613
<i>R</i> ² (overall)	0.878

t statistics in parentheses, * p<.10, ** p<.05, *** p<.01

Note: Variable definitions listed in the appendix

Table 3.11 Government Response to CEO Compensation by Quintile

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	<i>Ln(Government Grants)_{i,t+1}</i>				
<i>Ln(CEO Compensation)_{i,t}</i>	0.363*** (6.53)	-0.046 (-0.43)	-0.251** (-2.23)	-0.122 (-1.32)	-0.020 (-0.49)
<i>Program Ratio_{i,t}</i>	0.490*** (11.42)	0.365*** (9.64)	0.348*** (9.55)	0.373*** (9.11)	0.342*** (7.21)
<i>Governance_{i,t}</i>	0.038*** (6.49)	0.034*** (6.00)	0.040*** (6.73)	0.025*** (3.88)	-0.006 (-0.62)
<i>Board Size_{i,t}</i>	0.007** (2.25)	0.007** (2.56)	-0.003 (-1.29)	0.005** (2.08)	0.010*** (4.14)
<i>Board Size²_{i,t}</i>	-0.000*** (-3.59)	-0.000*** (-2.85)	0.000 (0.35)	-0.000** (-1.96)	-0.000*** (-4.21)
<i>Ln(Employees)_{i,t}</i>	0.105*** (8.44)	0.126*** (10.29)	0.103*** (8.46)	0.134*** (9.76)	0.149*** (11.05)
<i>Ln(Total Assets)_{i,t}</i>	-0.060*** (-5.73)	-0.039*** (-3.51)	-0.054*** (-4.56)	-0.039*** (-3.28)	-0.004 (-0.30)
<i>Ln(Org Age)_{i,t}</i>	-0.097*** (-3.78)	-0.113*** (-4.73)	-0.089*** (-3.90)	-0.059** (-2.50)	0.064** (2.49)
<i>Asset Tangibility_{i,t}</i>	0.186*** (3.78)	-0.089* (-1.79)	-0.016 (-0.31)	0.006 (0.11)	0.325*** (5.09)
<i>Commercial Dummy_{i,t}</i>	-0.423*** (-7.36)	-0.427*** (-7.73)	-0.534*** (-10.58)	-0.556*** (-10.33)	-0.582*** (-11.50)
<i>Ln(Fundraising Expense)_{i,t}</i>	0.013*** (2.97)	0.012*** (3.48)	0.013*** (3.66)	0.007** (2.03)	0.009** (2.37)
<i>Ln(Program Service Revenue)_{i,t}</i>	-0.020*** (-4.62)	-0.013*** (-3.19)	-0.001 (-0.30)	0.011** (2.32)	0.016*** (2.95)
<i>CEO Fundraising Efficiency_{i,t}</i>	0.017*** (13.75)	0.011*** (14.87)	0.010*** (14.83)	0.010*** (15.07)	0.010*** (17.79)
<i>Ln(Government Grants)_{i,t}</i>	0.787*** (119.94)	0.832*** (149.52)	0.828*** (149.29)	0.827*** (151.23)	0.820*** (161.48)
Constant	0.000 (.)	1.539 (1.23)	0.000 (.)	1.348 (1.23)	0.310 (0.46)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes	Yes	Yes	Yes
<i>N</i>	38,324	38,322	38,322	38,323	38,322
<i>R</i> ² (overall)	0.869	0.893	0.887	0.889	0.852

t statistics in parentheses, * *p*<.10, ** *p*<.05, *** *p*<.01

Note: Variable definitions listed in the appendix

Table 3.12 Univariate Analysis of Donor Response to Gendered CEO Switches

	n	$\Delta(\text{Individual Donations})_{t \text{ to } t+1}$	$\Delta(\text{Private Foundation Grants})_{t \text{ to } t+1}$	$\Delta(\text{Government Grants})_{t \text{ to } t+1}$
		Mean		
<i>Female to Male Comp Up</i>	3,560	82,799	807	73,295
<i>Female to Male Comp Down</i>	2,611	92,660	(1,377)	132,444
<i>Male to Female Comp Up</i>	3,202	60,562	(93)	82,438
<i>Male to Female Comp Down</i>	4,031	84,178	400	61,663
<i>Non-Gendered Comp Up</i>	16,280	90,110	1,005	66,955
<i>Non-Gendered Comp Down</i>	13,390	84,581	879	67,722

Table 3.13 Donor Response to CEO Compensation by CEO Gender Switches

	(1)	(2)	(3)	(4)	(5)	(6)
Gendered CEO Switch:	Male to Female	Female to Male	Male to Female	Female to Male	Male to Female	Female to Male
Dependent Variable:	$\Delta \text{Ln}(\text{Individual Donations})_{t \text{ to } t+1}$		$\Delta \text{Ln}(\text{Private Foundation Grants})_{t \text{ to } t+1}$		$\Delta \text{Ln}(\text{Government Grants})_{t \text{ to } t+1}$	
$\Delta \text{Ln}(\text{CEO Compensation})_{t-1 \text{ to } t}$	-0.013 (-0.34)	-0.016 (-0.42)	0.037 (1.45)	0.037 (1.44)	0.041 (1.26)	0.042 (1.28)
$\text{Gendered CEO Switch}_t$	-0.001 (-0.02)	-0.035 (-0.80)	0.046 (1.29)	0.031 (0.82)	-0.007 (-0.20)	-0.038 (-0.94)
$\Delta \text{Ln}(\text{CEO Compensation}) * \text{Gendered CEO Switch}_{t-1 \text{ to } t}$	-0.033 (-0.44)	-0.128* (-1.81)	-0.011 (-0.23)	-0.026 (-0.50)	-0.012 (-0.19)	0.038 (0.51)
$\Delta \text{Program Ratio}_{t-1 \text{ to } t}$	0.029 (0.21)	-0.043 (-0.31)	0.106 (1.52)	0.099 (1.46)	-0.007 (-0.08)	0.121 (1.20)
$\Delta \text{Governance}_{t-1 \text{ to } t}$	0.015 (0.66)	0.006 (0.25)	-0.01 (-0.60)	0.001 (0.09)	-0.012 (-0.63)	-0.006 (-0.31)
$\Delta \text{Board Size}_{t-1 \text{ to } t}$	0.028*** (2.74)	0.026** (2.49)	0.008 (0.96)	0.019** (2.34)	0.002 (0.23)	-0.004 (-0.37)
$\Delta \text{Board Size}^2_{t-1 \text{ to } t}$	-0.000** (-2.22)	-0.000* (-1.94)	0.000 (-0.83)	-0.000** (-2.10)	0.000 (-0.29)	0.000 (0.33)
$\Delta \text{Ln}(\text{Employees})_{t-1 \text{ to } t}$	0.018 (0.45)	0.039 (0.99)	-0.007 (-0.30)	-0.026 (-1.00)	0.058 (1.59)	0.047 (1.30)
$\Delta \text{Ln}(\text{Total Assets})_{t-1 \text{ to } t}$	-0.096 (-1.62)	0.024 (0.27)	0.028 (0.94)	0.042 (1.51)	0.035 (0.67)	0.051 (1.09)
$\text{Ln}(\text{Org Age})_t$	-0.019 (-0.80)	-0.037 (-1.54)	0.017 (0.87)	0.007 (0.34)	0.027 (1.29)	0.033 (1.50)
$\Delta \text{Asset Tangibility}_{t-1 \text{ to } t}$	0.006 (0.03)	0.129 (0.52)	-0.191 (-1.06)	-0.369** (-2.00)	0.095 (0.44)	0.408* (1.87)
$\Delta \text{Ln}(\text{Fundraising Expense})_{t-1 \text{ to } t}$	-0.01 (-1.04)	-0.012 (-1.25)	-0.005 (-0.54)	-0.002 (-0.25)	0.006 (0.71)	-0.003 (-0.35)
$\Delta \text{Ln}(\text{Program Service Expense})_{t-1 \text{ to } t}$	0.005 (0.31)	-0.003 (-0.18)	0.006 (0.70)	0.012 (1.25)	0.012 (1.34)	0.011 (1.08)
Constant	0.846* (1.77)	0.846** (2.02)	-0.184 (-0.60)	0.111 (0.30)	-0.668** (-2.03)	0.393 (1.22)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Cluster Standard Errors at Firm Level	Yes	Yes	Yes	Yes	Yes	Yes
N	37,141	36,079	37,141	36,079	37,141	36,079
R^2 (overall)	0.004	0.003	0.008	0.009	0.028	0.029

t statistics in parentheses, * $p < .10$,

** $p < .05$, *** $p < .01$

Note: Variable definitions listed in the appendix

CHAPTER 4: THE GROWING FIELD OF NONPROFIT ACCOUNTING RESEARCH: 21ST
CENTURY DATA SOURCES, TOPICS, AND OPPORTUNITIES

WITH JULIE M. MERCADO AND LINDA M. PARSONS

Introduction

In 1999, Gordon, Greenlee, and Nitterhouse reported on a significant development that had the potential to broadly expand research in nonprofit accounting beyond what was, until that time, often difficult and daunting work. Financial data from Form 990, an annual filing submitted to the Internal Revenue Service (IRS) and the primary financial reporting mechanism for most nonprofit organizations, would now be available in digitized form, thanks to the National Center for Charitable Statistics (NCCS).²⁷ Heretofore, accounting researchers interested in examining nonprofit reports had to manually collect copies of 990 filings directly from nonprofits or state charity offices (often the office of the state Attorney General), then create a database on their own from the collected reports.

The data collection process was frustrating, time-consuming, and laborious. As individual researchers/teams were required to create their own project-specific data files, there was no common dataset, collection efforts were duplicative, and the resulting datasets had limited years, sectors, and variables. As individual researchers/teams were required to create their own project-

²⁷ NCCS was established by the Center on Nonprofits and Philanthropy at the Urban Institute.

specific data files, there was no common dataset, collection efforts were duplicative, and the resulting datasets had limited years, sectors, and variables. According to Gordon et al. (1999), the NCCS's new digitized databases created an opportunity that would "enable researchers to perform analysis far beyond what is currently possible" (p. 121) by "eliminating data access problems" (p. 118). Additional good news was that the data would be available to academic researchers upon request without charge, so long as they included a description of their research study and agreed not to distribute the data or use it for additional projects.²⁸

Since the 1999 publication of the Gordon et al. paper, additional sources of nonprofit data have become accessible, allowing scholars to broaden the overall scope of research questions examined and better understand the ramifications of a wide variety of factors on organizational performance, managers' behavior, and donor decision making. For example, many states make available healthcare organizations' reported information pertaining to patient satisfaction, charitable care, and governance, and nonprofit ratings agencies have undertaken efforts in recent years to assess organizations' transparency and ability to accomplish their stated mission. This article examines nonprofit accounting research published in the two decades since Gordon et al. (1999, 118) first predicted a "real revolution" in oversight and examination of nonprofit organizations. We document trends in nonprofit accounting research spanning the past 21 years, specifically identifying data sources used, research topics investigated, and journals that published the studies. Our findings indicate that the availability of accessible and affordable digitized data opened the field to scholars who may have previously perceived data collection as a barrier to entry in the field. Nonprofit accounting research output has increased significantly and is now published broadly in accounting journals that are not focused specifically on

²⁸ Eventually, the requirement to apply for data access for a specific project was eliminated, and NCCS data is now available to researchers at no charge.

nonprofit issues. As the field has developed, those who conduct nonprofit research have diversified the data sources they integrate into their research designs and the research methods they use. The field has grown and matured significantly over the past two decades, offering insights into many aspects of nonprofit performance—broadly defined to include organizational, financial, and management performance—and stakeholders’ responses thereto.

Methodology

In order to examine contributions to the nonprofit accounting literature, we compile a list of every nonprofit accounting paper published from 2000 to 2020 in a variety of journals. We start with six journals (listed alphabetically) that are almost unanimously considered to be the top-ranked accounting journals (Top 6): *Accounting, Organizations and Society* (AOS); *The Accounting Review* (TAR); *Contemporary Accounting Research* (CAR); *Journal of Accounting and Economics* (JAE); *Journal of Accounting Research* (JAR); and *Review of Accounting Studies* (RAST) (Moon, Summers, Waddoups, and Wood 2021). We also include all journals published by the American Accounting Association, both the association-wide general topics journals and all 14 section journals.

Finally, we include a selection of accounting and cross-disciplinary journals that have traditionally been open to nonprofit accounting research. *Journal of Accounting Literature* (JAL) welcomes literature reviews on any accounting topic. *Journal of Accounting and Public Policy* (JAPP) is a natural fit for nonprofit research as many nonprofit issues have a policy component. JAPP sponsored special issues in 2009 and forthcoming in 2022 dedicated exclusively to governmental and nonprofit papers, another indication that nonprofit research is important to the journal. *Journal of Accounting, Auditing & Finance* (JAAF) is an accounting journal that has also welcomed nonprofit accounting research. *Journal of Public Budgeting, Accounting and*

Financial Management (JPBAFM) is described as an outlet for work in "the field of accounting, management and governance in organizations operating in the public square or public-private sphere."²⁹ *Financial Accountability & Management* (FAM) is an international journal that is "interdisciplinary in approach" for studies "of all types of governmental and other non-profit organizations and services."³⁰ *Journal of Business Ethics* (JBE) is a multidisciplinary business journal open to any business-related study, including those focused on nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly* (NVSQ) is a cross-disciplinary journal that focuses on "nonprofit, philanthropic, and civil society studies" in any discipline (business and non-business).³¹ *Research in Governmental and Nonprofit Accounting* (RIGNA), last published in 2009, was a periodical devoted entirely to government and nonprofit accounting topics. See Appendix E for a list of all journals included in the publication search.

To identify articles that examine nonprofit accounting, the authors independently undertook the following protocols. First, we obtained the tables of contents for each issue of the 29 selected journals for the years 2000–2020 and (except for papers that are clearly unrelated to nonprofit accounting) read the title and abstract of each paper to determine if it is appropriate for inclusion in our list. Because some articles' titles and abstracts do not clearly indicate a nonprofit setting, we next conducted a series of keyword searches in our selected journals. For accounting journals (e.g., JAL, JAAF) we used the search terms nonprofit, nongovernmental, NGO, charity(ies), charitable, donor, donation, healthcare, hospital, and 990. For non-accounting journals (e.g., NVSQ) we searched for accounting, financial, audit, and 990. Once we completed the search process, we all reviewed and combined the separate lists to create a full listing of

²⁹ See journal information at <https://www.emeraldgroupublishing.com/journal/jpbafm>.

³⁰ See journal information at <https://onlinelibrary.wiley.com/page/journal/14680408/homepage/productinformation.html>.

³¹ See journal information at <https://www.arnova.org/page/journal>.

nonprofit accounting papers published in the selected journals during our examination period. Editors' comments, opinion columns, and book reviews are not included in our list of research papers. We exclude papers that do not examine issues associated with nonprofit organizations or the sector. Examples of excluded papers are studies that investigate corporate entities indirectly associated with healthcare (e.g., pharmaceutical companies, device manufacturers) rather than healthcare providers, research specifically focused on for-profit hospitals, studies of health benefits provided by employers, and papers that focus on governmental oversight agencies rather than the nonprofit organizations they regulate.

While JOGNA readers are interested in both nonprofit and governmental topics, this analysis is limited to nongovernmental, nonprofit (i.e., private charitable) organizations. The motivation for this study is to examine the state of nonprofit accounting research after digital databases became widely available, reducing the need for hand collection of data. There has been no similar development involving governmental accounting reports, and governmental accounting researchers still experience the need for laborious acquisition of individual financial reports and hand collection of governmental accounting data therein. We do, however, make two exceptions to include studies that examine public sector (governmental) entities: healthcare and higher education. Because hospitals and colleges/universities provide comparable services and experience similar reporting and governance challenges regardless of their organizational form (nonprofit or governmental), we include all studies that investigate accounting questions for healthcare or higher education organizations that do not operate for profit.

To show how readily-accessible data are being used for research in the nonprofit accounting field, we ascertain the data source(s) used in each study. We then identify the accounting topic examined in order to catalog the breadth of the types of studies conducted. We

partition the publications into two decades—2000 to 2010 and 2011 to 2020—to help detect notable changes in data sources or topics examined over the 21-year span.³² See Appendix F for a list of all published papers included in our analyses, including the assigned topics.

Data Sources

Over the past two decades, nonprofit accounting researchers have enjoyed the proliferation of and access to new data like never before. While much of the prior century’s accounting research involving nonprofit organizations focused on information obtained from individual IRS filings and/or hand-collected financial data, today there is great diversity in the sources and types of nonprofit data available to researchers and, in many cases, the data are freely available. From the expanded IRS Form 990 to healthcare filings and required audit reports, to ratings agency information and results from surveys and experiments, options abound for ways to answer many of the important research questions that nonprofit accounting scholars will ask as the field advances and the world around us continues to change.

As predicted in Gordon et al. (1999), data made available by the NCCS and others in recent years have allowed nonprofit researchers to perform analyses far beyond that which was possible a mere twenty, or even ten, years ago. In Table 1, we identify every data source included in the 447 nonprofit accounting papers published in the journals we selected and report the number of papers that use each data source. Research studies often obtain data from multiple sources (e.g., combining NCCS SOI, Core, and Digitized Data files with audit or healthcare data). When a paper in our sample uses multiple data sources, it is included in the table multiple

³² The 2000–2010 timeframe starts immediately after the NCCS data became available in digitized form, and the 2011–2020 interval begins when papers using data from the 2008 revised Form 990 were first published. We refer to these periods as “decades” throughout the paper, even though the first period spans 11 years. As our study’s focus is growth, we chose to include the “extra” year in the first period so as not to exaggerate results or inferences.

times. Therefore, the column totals exceed the unique number of papers published in each time period. Our examination of the data sources used in nonprofit accounting papers published from 2000 to 2020 reveals some distinct and familiar data categories, plus a variety of additional sources.

Form 990 Data

Not surprisingly, the primary source of data used in nonprofit accounting research over the past two decades is IRS Form 990 (hereafter 990). This is not different from the period before 2000; what has changed most dramatically is how nonprofit scholars can now obtain 990 data. Prior to the creation of the NCCS databases, nonprofit accounting researchers had to request 990s from state charity offices (often through their websites or by visiting state offices) or directly from nonprofit organizations in order to create a project-specific database. We identified 26 papers where the authors requested 990s directly from organizations, only four of which were published after 2010. Only 14 studies relied on 990s provided by states or obtained directly from the IRS during our sample period.

After the NCCS made 990 data available for research, nonprofit accounting researchers began to use these databases rather than create their own. NCCS databases include the Statistics of Income (SOI), Core and Digitized Data files, and the Business Master File (BMF).³³ There are 61 papers (14 percent of all selected published papers) that used the SOI files, 16 that used the Core files, and 24 that obtained 990 data from the Digitized Data files. Published papers relying on the NCCS files increased substantially in the second decade of the 21st century compared to

³³ Individual NCCS databases vary on the type and size of nonprofit organizations included, the variables available, and the filing years included (see summary in Appendix G). See Gordon et al. (1999) and Feng, Ling, Neely, and Roberts (2014) for detailed descriptions of each NCCS database, including the benefits and limitations of each.

the first. In sum, the NCCS data files appear to have made an important contribution to the nonprofit accounting field.

More recently, other sources of 990 data have surfaced. GuideStar, a leading repository of nonprofit information, sells a 990-dataset similar to that provided by NCCS. Sixteen papers have used 990 data provided by GuideStar, primarily in the 2011–2020 timeframe. The E-Filer database, which is made available by the IRS and is now accessible through the IRS Tax Exempt Organization Search (TEOS), is a relatively new source of 990 data. In 2010, the IRS began accepting electronically-filed (“e-filed”) Forms 990, 990-EZ, and 990-PF, then began making those electronic filings available as XML files through Amazon Web Services (AWS) in 2016. As of early 2022, the IRS is phasing out usage of AWS and moving access to the E-Filer database to its TEOS search engine.³⁴ While this data can be difficult to access and use, its advantage is that it has nearly all fields from Form 990 accessible in machine-readable form.³⁵ This data source was used in just four published studies in our sample, which is likely a function of it only recently being made available.

Healthcare Data

Healthcare research is a significant portion of the nonprofit accounting field, in no small part because of the size of the healthcare sector and its relevance to many facets of life. Another factor is the availability of data pertaining to a variety of areas, including governance, management, operations, and financial performance of healthcare organizations. The healthcare sector is highly regulated, and many states require healthcare facilities to report information that goes far beyond that which is typically contained in 990s or other financial disclosures.

³⁴ Single-organization search as well as bulk data downloads are available at: <https://www.irs.gov/charities-non-profits/tax-exempt-organization-search>

³⁵ Wu and Dull (2020) describe the process of accessing and using the E-Filer database in further detail.

Additionally, there are several types of ownership structures in healthcare systems—including nonprofit, for-profit, and government-operated—which provides opportunities for scholars to examine healthcare-related research questions in a variety of contexts.

Healthcare-related data are available from a number of sources, and those too have changed over the past 21 years. Early in our examination period, healthcare accounting researchers often used reports filed in individual states or relied on private data sources. One source used exclusively in the 2000–2010 timeframe is Merritt System[®], a private credit and investment analysis database containing audited financial statement information, socio-economic information, and supplementary operational statistics for hospitals in all 50 states and Washington, D.C. Another data source is the American Hospital Association (AHA), which was more commonly used in the 2000–2010 period (seven papers) compared to the 2011–2020 period (only three papers). Some AHA data has recently become part of the widely used Wharton Research Data Services (WRDS) platform, with more than 40 years of hospital information now available through this system. For researchers who have access to WRDS, it is possible that the AHA will again be a relevant data source in the future.

Several states (in the U.S. and internationally) require healthcare organizations to report data that is then made available to the public, and these state hospital reports continue to be a source of data for healthcare research. There were 27 studies that relied on data from state filings, and the frequency was similar in both decades. California’s Office of Statewide Health Planning and Development (OSHPD) is one of the most commonly cited data sources in healthcare accounting research. The state’s size alone is good reason to use this data, but the OSHPD database provides an additional unique advantage in that the state has required healthcare organizations to report detailed governance information for years. Owner and board of

director characteristics such as name, occupation, and overall board size are provided, along with owners' and board members' compensation and percent of ownership (if any).

In Texas, nonprofit hospitals must provide a minimum threshold of charitable care and community benefits in order to maintain their tax-exempt status, so they are required to submit an annual community benefit report. The Texas Health Care Information Collective (THCIC), established in 1995, provides the community benefit reports and other hospital data to the public. While not as extensive as the OSHPD database, THCIC reports do include common metrics like number of beds, utilization, bad debt charges, charitable care, and net and gross patient revenue. Many other states, including Arizona, Connecticut, Florida, Illinois, Oregon, Pennsylvania, and several non-U.S. governments, also collect and disseminate healthcare data, sometimes for a fee.

Recently, a more commonly used source of healthcare data is from the Centers for Medicare & Medicaid Services (CMS). CMS makes a large assortment of data available at their website, www.cms.gov, from broad national health expenditures to specific zip code-level public use files and many things in between. As shown in Table 1, use of the CMS Medicare/Medicaid database increased in the 2011–2020 timeframe, from one to eleven papers. This may be due, at least in part, to the expansion of Medicaid in many states following the passage of the Patient Protection and Affordable Care Act (ACA) in 2010. The ACA requires more performance data about healthcare providers and suppliers to be provided to the public, and in 2011 CMS adjusted its Availability of Medicare Performance Measurement in response.³⁶

Additional Archival Data

Several nonprofit accounting studies combine 990 financial data with audit-related data from Single Audits (formerly known as OMB Circular A-133 audits). Single Audits are required

³⁶ See details on changes to promote transparency at <https://www.cms.gov/newsroom/fact-sheets/final-rule-release-medicare-data-be-used-performance-measurement>.

for non-federal entities—including nonprofits, Native American tribes, and state and local governments—that expend more than \$750,000 of federal funds in a given year. The audit report includes information about the auditor, auditee, type of audit, federal awards, and audit findings, and is available through either the Federal Audit Clearinghouse (FAC) A-133 database or Audit Analytics. Audit Analytics is a costly addition to the WRDS database while the FAC is free. Feng, Ling, Neely, and Roberts (2014) describe the FAC and Audit Analytics databases, noting that Audit Analytics includes cleansed auditor data from the FAC database.

Single Audit data is used in 22 nonprofit accounting papers that span our study’s timeframe, 18 of which were published in the most recent decade, showing a sizable increase in interest in nonprofit audit research. Likely due to the additional cost, only three of the twenty-two audit papers in our sample use Audit Analytics to access Single Audit data.

Charity ratings agencies use 990 data to synthesize individual nonprofits’ financial information into a performance score that can be a useful means of comparison for potential donors (Harris and Neely 2016). The three largest ratings agencies are Charity Navigator, the Better Business Bureau Wise Giving Alliance (BBB), and Charity Watch (formerly the American Institute of Philanthropy) (Lowell, Trelstad, and Meehan 2005). The agencies identify different metrics and use different rating scales: Charity Navigator gives an overall score of 0 to 4 stars based on separate “Financial Health” and “Accountability & Transparency” scores; BBB issues a Pass/Fail based on 20 standards for accountability; and Charity Watch issues a letter grade from A to F based on the program and fundraising efficiency ratios (Harris and Neely 2016). Researchers who incorporate charity ratings data into their analyses tend to use one or more of the ratings as a measure of organizational quality. Credit rating agencies, such as Moody’s and S&P, provide ratings for bonds issued by charitable organizations (often hospitals).

Studies using ratings data represent a relatively small portion of our overall sample with only nine total papers, but six of those were published in the most recent decade, which may signal an opportunity for additional studies that incorporate this data.

To access information that is relevant to nonprofit organizations but not included in 990s or audit reports, nonprofit accounting researchers often seek out other sources of information to use in combination with 990 data. From 2000 to 2020, 115 nonprofit accounting papers (26 percent of published papers) included at least one “other” archival source in their research design. This includes 66 papers over the past decade, suggesting that novel data from non-traditional sources can provide fruitful avenues for nonprofit research. Examples include college and university rankings, corporate giving directories, U.S. census and labor data, international audit data, state tax assessor data, news reports discovered through LexisNexis searches, and an online database from a national newspaper listing frauds in nonprofit organizations.

Human Subjects Data

Many researchers use behavioral methods such as experiments, surveys, interviews, and case studies to gather data related to nonprofit accounting questions. These methods allow researchers to directly question nonprofit stakeholders, such as managers or donors, to obtain insight into how they prepare or use nonprofit accounting information. While surveys, interviews, and case studies are used with similar frequency throughout the timeframe we examine, experiments are becoming more common, with five experiments published in the early decade, and fifteen published in the most recent decade. This trend may be enhanced in the future due to the creation and ease of using online survey distribution platforms such as Prolific and Amazon’s Mechanical Turk (MTurk), which can host various types of experiments (e.g., timed, multi-round, open-access, invitation-only) and can connect researchers with participants

who are pre-screened for eligibility criteria in areas such as education, occupation, geographic location, and demographic information.³⁷

Data Resource Summary

Table 1 shows that however we access data, there is growth in the quantity of nonprofit accounting studies, with 197 papers published in the first decade of our sample period and 250 published in the second, an increase of 27 percent. Figure 1 shows a clear upward trend in nonprofit accounting publications over the past two decades, culminating in 40 publications in 2020. The increase is largely driven by papers that use 990 data, often paired with data from other sources such as healthcare, audit, or other archival databases. Studies using the NCCS SOI database increased from a total of 19 published papers from 2000–2010 to 42 published papers from 2011–2020. Studies using data obtained from GuideStar grew from two to fourteen over the same timeframe. Medicare and Medicaid data available from CMS was used in eleven published papers from 2011 to 2020 compared to just one in the previous decade. Overall, the expansion of availability and variety of data bode well for the future of nonprofit accounting research.

Topics

Table 2 reports the various topics for nonprofit accounting papers published from 2000 to 2020, partitioned by decade. For each publication, we categorize the research topics into at least one of seventeen broad categories. A single publication can address multiple topics, such as the impact of governance on fraud, executive compensation in higher education, or international healthcare. If a study addresses more than one topic, we include it in the count for each

³⁷ See Buchheit, Doxey, Pollard, and Stinson (2018) for more details regarding the use of these types of platforms.

classification. For this reason, the column totals are greater than the number of unique publications.

Unsurprisingly, the two most common specific topics for nonprofit accounting papers across the entire examination period are healthcare and financial reporting and disclosure. Healthcare is a significant part of the nonprofit sector, and 141 papers (32 percent of all publications in our sample) involve an investigation of hospitals or other healthcare entities. Accounting research generally focuses on how various stakeholders use financial information, and the accounting research in nonprofit organizations is no exception. Financial reporting and disclosures accounted for 142 of the 447 published papers (32 percent) in our sample. There were 20 percent more papers addressing financial reporting and disclosure in the 2011–2020 period compared to the previous decade, likely due to the availability and accessibility of large databases with 990s recorded in digital format.³⁸

Like financial reporting and disclosure, accounting studies in general, and nonprofit accounting studies specifically, often examine governance and managerial issues. During our sample period, there were 114 papers that focused on governance and accountability and 109 that included managerial concerns (26 percent and 24 percent, respectively, of our total sample).

The two topics that experienced the most growth from the first decade of our analysis to the second are governance and compensation. There were almost twice the number of studies examining either governance or compensation in the second decade compared to the first. The substantial increase is primarily due to new data that resulted from the 2008 expansion of Form 990, which involved the addition of questions and disclosures related to governance, management, and compensation. This new governance section includes over twenty questions

³⁸ While the NCCS databases were available starting in 1999, the time from idea to publication is long enough that publications using the newly-available data were first published several years into the first decade of our sample.

about such items as the existence of certain policies (e.g., policies regarding whistleblowers or conflicts of interest) and details about board members and their relationships with key employees of the organization (Boland, Harris, Petrovits, and Yetman 2020). The new supplemental Schedule J provides details about the various forms of executive compensation.

A substantial area of nonprofit study involves organizations and/or stakeholders outside the United States. The international nonprofit studies in our sample (144 studies, representing 32 percent of published papers) examine charitable organizations and hospitals in a variety of countries, including Taiwan, Germany, Australia, Turkey, Ghana, and China. Often this research uses data from state regulatory filings. There is likely a great opportunity to continue examining international nonprofit organizations, especially where accounting standards and state support of nonprofits vary from those in the U.S.

The 27 percent increase in the number of papers in our sample from the first decade to the second includes a 58 percent uptick in the number of nonprofit accounting papers published in the Top 6 accounting journals.³⁹ However, the representation of research topics included in the Top 6 journals differs somewhat from that of the sample as a whole. While 32 percent of our sample papers examine financial reporting and disclosures, only 8 percent of these papers are in Top 6 journals, representing 18 percent of the 67 nonprofit papers published in Top 6 journals during our sample period. Similarly, nearly one-third of our sample papers involve healthcare contexts, and only 17 percent of those papers are published in the highest-ranked journals. However, healthcare papers comprise 36 percent of all nonprofit papers in Top 6 journals from 2000–2021. Although only 7 percent of papers in our study address compensation issues, nearly

³⁹ The increase in publications is particularly interesting given that faculty membership in the Government and Nonprofit section of the American Accounting Association (AAA) declined from 612 in 2000 to 400 in 2010 and 279 in 2020 (membership numbers provided by the AAA).

half (43 percent) of those are in Top 6 journals, constituting 19 percent of the nonprofit papers published in Top 6 journals. Earnings management, including the management of spending ratios, is the subject of only 6 percent of our total sample, but 38 percent of the nonprofit earnings management papers published between 2000 and 2021 are in the highest-ranked accounting journals, representing 16 percent of our Top 6 sample. Although papers related to governance and accountability in nonprofits comprise 26 percent of our total sample, this is the most common topic for nonprofit papers in Top 6 journals, accounting for 42 percent of the total. Differences between the topics of published papers in our overall sample and those of papers in Top 6 journals may indicate that these journals are primarily open to traditional accounting topics with appeal across various organizational types, or perhaps that researchers who focus on these topics are more likely to submit their work to the Top 6 journals.

Table 3 shows the topics of the papers in our sample categorized by the journals in which they appear. From 2000 to 2020, there were 447 nonprofit accounting papers published in a wide range of accounting and cross-disciplinary journals. Nonprofit research has been published in each of the Top 6 accounting journals, with a total of 67 nonprofit publications appearing in these journals over the past 21 years. Over one-third of these papers (25) are in *Accounting, Organizations & Society*, where the focus of nonprofit research is primarily on international healthcare, governance, and managerial topics. *The Accounting Review* is the Top 6 journal with second-most nonprofit publications, with its 20 papers being largely concentrated in the areas of compensation, earnings management, and other forms of financial reporting. The top-ranked journals most often publish articles investigating governance (28 papers), healthcare (24 papers), managerial issues (23 papers), compensation (13 papers), financial reporting and disclosures (12

papers), and earnings management and misreporting (11 papers), many of which have an international focus (24 papers).

Nonprofit accounting research is published in every AAA journal except the *Journal of International Accounting Research*. AAA has 14 section journals, several of which are relatively new. Six of the fourteen AAA section journals were established and issued for the first time during our sample period. These include *Journal of Legal Tax Research* (JLTR) in 2003, *Journal of Emerging Technologies in Accounting* (JETA) in 2004, *Current Issues in Auditing* (Current Issues) in 2007, *Journal of Governmental and Nonprofit Accounting* (JOGNA) in 2012, and both the *Journal of Forensic Accounting Research* (Forensic) and *Journal of Financial Reporting* (JFR) in 2016. These new journals account for 33 publications (7 percent) in our sample, 18 of which are published in JOGNA, making it the section journal with the second-most nonprofit publications during the timeframe we examine. With 21 papers, *Accounting Horizons* is the AAA journal with the largest number of nonprofit research papers published during our sample period.

Over the past two decades, FAM is the journal that has published the most nonprofit accounting articles (88), followed by NVSQ (68), JPBAFM (41), JBE (34) and JAPP (28). There are, on average, approximately 13 articles per year for the past 21 years in journals which comprise our “other” category, which do not cater specifically to either nonprofit topics (FAM, JPBAFM, JAPP, JAAF, JAL) or accounting research (NVSQ, JBE). Multiple nonprofit accounting papers representing each of our 17 topic areas have been published in these “other” journals, indicating that the range of nonprofit accounting research topics is broad and becoming more diverse. FAM, which contains more international nonprofit accounting research (74 papers) than the total from all other journals in our list (70 papers), also publishes more papers

examining healthcare (40), managerial issues (37), governance (31), regulation (15), and higher education (11) than the other journals. JPBAFM and JAPP frequently publish articles investigating healthcare (15 and 14, respectively) as well, with other common topics in those journals being financial reporting and disclosures (13 and 15, respectively) and managerial (8 each). NVSQ publishes more studies pertaining to financial reporting and disclosures (43), research methodology (6), and fraud (3) than any other journal in our list, while JBE has published 16 of the 18 papers related to corporate giving.

Altogether, the results in Table 3 indicate there is a wide audience for the various types of research being conducted by nonprofit accounting scholars. Both the availability of data and the increased number of publication outlets that are receptive to nonprofit accounting research have contributed to the increase in the number of published papers in this area, from 197 in the 2000–2010 period (an average of 18 per year) to 250 in the 2011–2020 period (an average of 25 per year). A simple *t*-test shows the yearly average is significantly larger ($p < 0.01$) in the second period compared to the first.

Opportunities

The future of nonprofit accounting research will likely see a continuation of some of the trends of the past 21 years, especially as it relates to the increasing availability of data. Future opportunities could involve both improved access to existing data and the collection or creation of new information about nonprofits. In the realm of providing improved access to existing data, the 2019 Taxpayer First Act requires electronic filing of all 990s for tax years that begin after July 1, 2019, making the relatively new E-Filer database the most complete source of 990s moving forward. While the data available through AWS is somewhat difficult to use, the

Nonprofit Open Data Collective (NODC) and Open990⁴⁰ are working to create more accessible datasets derived from the E-Filer database. While we identify only four published studies to date that use E-Filer data, it is likely to be widely used in future nonprofit research, especially because the NCCS data files have not been updated to contain the most recent reporting years.

Accounting researchers will also need to investigate the impact of substantial changes in the political, economic, and/or cultural landscapes surrounding nonprofit organizations. For example, The Tax Cuts and Jobs Act of 2017 implemented changes, such as increasing the standard deduction, that greatly decrease the number of taxpayers who itemize deductions, in turn reducing the number of people who receive a tax deduction for their charitable giving. It remains to be seen—because the data are only just starting to become available—whether those changes have led to a change in donations and, if so, if they affected all nonprofit sectors similarly.

Additionally, the global COVID-19 pandemic has affected demand for services from and availability of donations to nonprofit organizations. As different countries have responded to the pandemic in a variety of ways, nonprofit accounting scholars will have many context-specific research questions to explore. New sources of data related to the pandemic may provide several avenues for researchers to pursue in the future. For example, Charity Navigator, a prominent charity ratings agency, has curated a list of highly rated nonprofits that specialize in providing support to people affected by the COVID-19 fallout.⁴¹ It groups the nonprofits by categories that include Medical Services, Relief Supplies, Education & Awareness, and Funding Local Organizations. While data are not yet available relating to donors' use of this resource, it shows one of the benefits of having ratings agencies in place that can assess the work of many nonprofit

⁴⁰ See information at <https://www.open990.org/>.

⁴¹ COVID-related effects include health, education, and economic consequences of the pandemic.

organizations and then use their analyses to provide donors with information that they otherwise might not be able to find on their own without investing much time and effort into the process.

A recent trend in the nonprofit sector is the effective altruism movement, which seeks to maximize the societal benefit of philanthropic dollars. GiveWell, a pioneer in this area, examines the impact of charities and recommends a list of organizations that maximize the lives saved or improved with each dollar of giving. GiveWell reports that its donors contributed \$150 million to recommended charities in 2019 (Dey 2020). Other agencies have taken notice of the effective altruism movement and are starting to emphasize program outcomes and results alongside traditional financial metrics. GuideStar recently introduced its Platinum status, the highest level of recognition it offers to acknowledge organizations that report actual progress and results (i.e., outputs and outcomes).

In a similar vein, Charity Navigator recently acquired Impact Matters, an organization focused on evaluating high-impact nonprofits. In October 2020, Charity Navigator began a beta test of the Impact and Results Beacon, which will display information about the impact of the nonprofit organizations it rates. For example, the Impact and Results Beacon for Evidence Action finds that \$0.50 provides clean water to a person for a year. It will also provide a score out of 100, which will make impact comparable across organizations, even when their units of measurement for outcomes are different. These and other sources of impact data will likely be useful for donors who wish to measure the true influence of their giving. Future researchers may study this information to determine its incremental value to a variety of stakeholders.

To aid nonprofit accounting scholars in their efforts to continue the positive trends this research area has seen over the past twenty-plus years, we include links to some resources pertaining to the information we have discussed. Appendix C summarizes information about the

990 datasets discussed in this paper. As these datasets are not held in a centralized location, we provide links to the data sources and summarize the years available for download, the types of 990s included (e.g., 990, 990-EZ, 990-PF), the number of observations and variables, the schedules available, and information regarding specialized data. See also Feng et al. (2014) for specific guidance on using many of the available databases, including a discussion of benefits and limitations of each.

Conclusion

In this article we review a significant portion of the nonprofit accounting research published in the years since Gordon et al. (1999) first encouraged scholars in the field to take advantage of the newly available digitized data from NCCS. Our results are summarized using descriptive statistics. What we find demonstrates that work in the field has increased and diversified over the past two decades, likely due to several factors. First, it appears nonprofit scholars answered the call from Gordon et al. and took advantage of readily available digitized data to address questions on a broad range of topics. Second, the amount and type of accessible information has expanded during the timeframe we examine. The IRS revised Form 990 in 2008 to include new governance and compensation information, and CMS increased the amount of healthcare data reported beginning in 2011. Third, nonprofit scholars had new outlets for their accounting work as several AAA journals receptive to nonprofit research were established after 2000. With 14 section journals now available, nonprofit studies can find a home in a wide range of special topics journals. Finally, nonprofit accounting research appears to be no longer destined exclusively for nonprofit journals. Each of the top-ranked accounting journals have published nonprofit research, as have the AAA association-wide and section journals, general accounting journals that do not focus on nonprofits, and nonprofit journals that do not focus on accounting.

The field has grown and matured, and opportunities to continue examining new areas in a changing world abound.

Table 4.1 Number of Published Nonprofit Accounting Papers Using Each Listed Data Source

Number of Papers Using Each Data Source			
Data Source	2000–2010	2011–2020	Total
990 Data			
NCCS SOI	19	42	61
NCCS Core	4	12	16
NCCS Digitized Data	6	18	24
NCCS BMF	2	4	6
IRS Website or State Filings	8	6	14
E-Filer	0	4	4
GuideStar	2	14	16
990 (not specified)	1	4	5
Request from Organization	22	4	26
Healthcare/Hospital Data			
State Healthcare Database	13	14	27
CMS Medicare/Medicaid	1	11	12
AHA	7	3	10
Merritt System®	6	0	6
Additional Archival Data			
Single Audit	4	18	22
Rating Agencies	3	6	9
Organization Websites	2	8	10
Other Archival Sources	49	66	115
Human Subjects Data			
Lab or Field Experiment	5	15	20
Survey or Interview	40	30	70
Field/Case Study	25	25	50
Other Data			
Literature Review ^a	6	14	20
Historical Review	3	4	7
No Data ^b	19	11	30

Total Number of Papers	197	250	447
Total Papers in Top 6 Journals	26	41	67

Note: Some papers combine multiple data sources in their research design and are included more than once in the counts. For this reason, column totals exceed the number of unique publications. See Appendix A for a list of all journals and Appendix B for all papers included in the sample.

^a Literature reviews include papers providing meta-analysis or those that use prior research to develop proposed frameworks, as well as traditional literature reviews.

^b Papers with no data include those that use legal analysis, discuss standard setting, or present theoretical modeling.

Table 4.2 Number of Published Nonprofit Accounting Papers Categorized by Research Topic

Accounting Topic	Number of Papers on Each Topic				Top 6 Journals	
	2000–2010	2011–2020	Total	% of all Papers	Number Published	% of Papers on Topic
Financial/Managerial Accounting Topics						
Financial Reporting/Disclosures	63	79	142	32%	12	8%
Earnings Management/Misreporting	13	16	29	6%	11	38%
Governance/Accountability	40	74	114	26%	28	25%
Compensation	9	21	30	7%	13	43%
Managerial	60	49	109	24%	23	21%
Sector-Specific Topics						
Healthcare	71	70	141	32%	24	17%
Higher Education	20	14	34	8%	0	0%
Foundations	5	9	14	3%	2	14%
Specialty Accounting Topics						
Audit	16	23	39	9%	1	3%
Fraud	1	8	9	2%	0	0%
Tax	23	11	34	8%	6	18%
International	69	75	144	32%	24	17%
Other Topics						
Corporate Giving	11	7	18	4%	2	11%
Regulation/Standard Setting	28	28	56	13%	5	9%
Ratings	6	4	10	2%	1	10%
Research Methodology	5	8	13	3%	0	0%
Miscellaneous	0	2	2	0%	0	0%
Total Number of Papers	197	250	447			
Total Papers in Top 6 Journals	26	41	67			

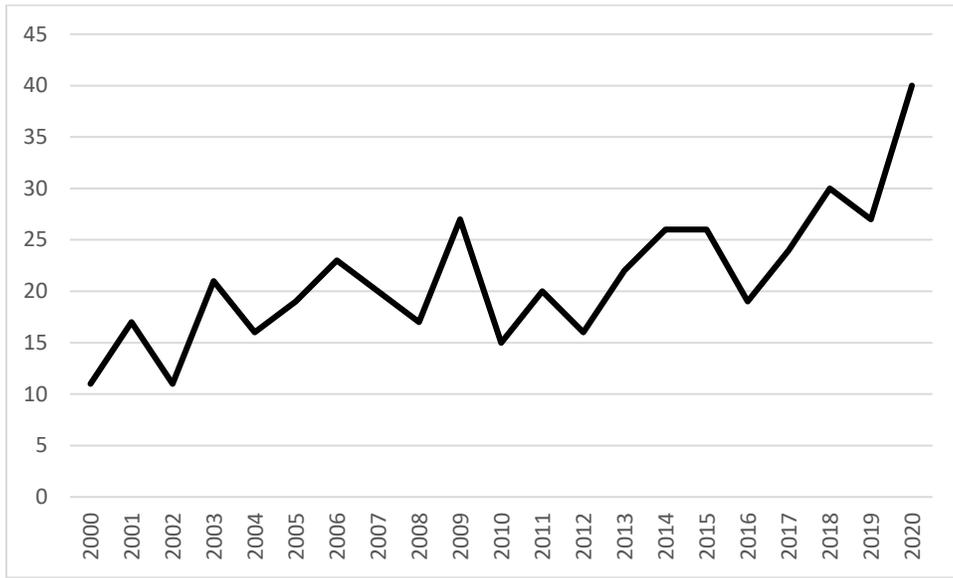
Note: Some papers address more than one research topic and are included more than once in the counts. For this reason, column totals exceed the number of unique publications. Accounting topics were determined by the authors. See Appendix A for a list of all journals and Appendix B for a list of all papers in the sample, including the assigned topics for each.

Table 4.3 Number of Nonprofit Accounting Papers by Topic in Each Selected Journal 2000–2020

Journal	<i>Financial/Managerial Accounting Topics</i>					<i>Sector-Specific Topics</i>			<i>Specialty Accounting Topics</i>				<i>Other Topics</i>					Total Papers
	Financial Reporting/ Disclosures	Earnings Management/ Misreporting	Governance/ Accountability	Compensation	Managerial	Healthcare	Higher Education	Foundations	Audit	Fraud	Tax	International	Corporate Giving	Regulation/ Standard Setting	Ratings	Research Methodology	Miscellaneous	
Top 6																		
TAR	6	7	4	7	4	4				3		1	2					20
AOS	3		13	1	14	10					21		2					25
CAR	2	2	5	1	3	5			1	1	3			1				11
JAE		1	5	3		1	2			2		1						6
JAR	1	1	1		2	4							1					4
RAST				1														1
Total Top 6	12	11	28	13	23	24	0	2	1	0	6	24	2	5	1	0	0	67
AAA Journals																		
Horizons	9	1	6	3	7	7	1		1				3	1				21
AJPT	1		1			1			6		1							6
BRIA	3					1				1								4
Current Issues			1						1									1
JETA					1		1								1			2
Forensic										1								1
JOGNA	3	1	5		2	4	1	1	4	1			3					18
Historians	5								2			3		1				5
JLTR	1		1			3	1				9			2				10
JMAR	1		1	1	9	8	1				3							10
API	2	1			2	5	1				3		2		1			7
JFR	1		1															1
JIS	1		2		3	5	1				1				1			6
JATA		4				3		3		12			3					12
Total AAA	27	7	18	4	24	37	7	4	14	3	21	11	0	14	2	2	0	104
Other																		
FAM	17	1	31	6	37	40	11	3	6		74		15	1				88
JAL	2	1																2
JAAF	2	1			2	1			2		2				1			6
JAPP	15	3	2	1	8	14	3		3		1	4		7	1			28
JBE	5		12		3	6		3		2	11		16	2	1	1	1	34
JPBAFM	13	1	6	5	8	15	10		7	1	1	7		6	2	1		41
NVSQ	43	4	17	1	2	3	2	2	3	3	5	11		6	2	6	1	68
RIGNA	6				2	1	1		3					1	1	2		9
Total Other	103	11	68	13	62	80	27	8	24	6	7	109	16	37	7	11	2	276
Total	142	29	114	30	109	141	34	14	39	9	34	144	18	56	10	13	2	447

Note: Some papers address more than one research topic and are included more than once in the counts. For this reason, row totals exceed the number of unique publications. See Appendix A for a list of all journals and Appendix B for a list of all papers in the sample, including the assigned topics for each.

Figure 4.1 Nonprofit Accounting Publications by Year 2000-2020



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APPENDIX A: VARIABLE DEFINITIONS FOR CHAPTER 2

Variable Definitions

<i>Initial PF Grant Ind</i>	1 if the organization received at least one initial private foundation grant in the fiscal year, 0 otherwise
<i>Ln(Individual Donations)</i>	Natural log of donations - government grants - private foundation grants for the organization in the fiscal year
<i>Ln(Initial PF Grants)</i>	Sum of initial private foundation grants received by the organization in the fiscal year
<i>Distress</i>	1 if the organization reports a 20% decline in net assets and a decline in program expenses over three years, 0 otherwise
<i>Governance</i>	Sum of 16 governance measures from part VI, increasing in good governance for the organization in the fiscal year
<i>Indirect Support</i>	1 if the organization reports revenues from federated campaigns in the fiscal year, 0 otherwise
<i>Ln(CEO Compensation)</i>	Natural log of CEO Compensation for the organization in the fiscal year
<i>Ln(Fundraising Expense)</i>	Natural log of fundraising expense for the organization in the fiscal year
<i>Ln(Government Grants)</i>	Natural log of government grants for the organization in the fiscal year
<i>Ln(Program Service Revenue)</i>	Natural log of program service revenue for the organization in the fiscal year
<i>Ln(Total Assets)</i>	Natural log of total assets for the organization in the fiscal year
<i>Negative Margin</i>	1 if the organization in the fiscal year reported total revenues \leq total expenses, otherwise 0
<i>Operating Margin</i>	Total revenues – total expenses / total revenues for the organization in the fiscal year
<i>Org Age</i>	Age of the organization in the fiscal year
<i>Positive Margin</i>	1 if the organization in the fiscal year reported total revenues \geq total expenses, otherwise 0
<i>Predicted Vulnerability</i>	Calculated using the predicted vulnerability probit model shown in Appendix A
<i>Professional Accounting Fees</i>	1 if the organization reports greater than \$1000 in professional accounting fees in the fiscal year, 0 otherwise
<i>Program Ratio</i>	Program expenses / total expenses for the organization in the fiscal year
<i>Relative Equity</i>	Total assets -total liabilities / total revenue for the organization in the fiscal year
<i>Revenue Concentration</i>	$\Sigma(\text{Revenue source} / \text{total revenues})^2$ for the organization in the fiscal year
<i>Single Audit</i>	1 if the organization reports single audit in the fiscal year, 0 otherwise
<i>Working Capital</i>	When current assets > current liabilities: (current assets - current liabilities)/current assets for organization in the fiscal year, 0 otherwise

APPENDIX B: PREDICTED VULNERABILITY MODEL FOR CHAPTER 2

Predicted Vulnerability Model

Before running my main test, I estimate a predicted vulnerability model to create a single proxy for financial vulnerability for ease of interpretation:

$$\begin{aligned} \text{Prob}(\text{Distress})_{i,t} = & \beta_1 \text{Relative Equity}_{i,t-3} + \beta_2 \text{Revenue Concentration}_{i,t-3} + \beta_3 \text{Operating} \\ & \text{Margin}_{i,t-3} + \beta_4 \text{Negative Margin}_{i,t-3} + \beta_5 \text{Working Capital}_{i,t-3} + \beta_6 \text{Ln}(\text{Total} \\ & \text{Assets})_{i,t-3} + \sum \text{Industry}_k + \varepsilon \end{aligned} \quad (2)$$

This predictive model is similar to the one used by Allen and McAllister (2019). *Distress* is a proxy for a current financial distress, and is defined as 1 if an organization reports a 20% decline in net assets and a decrease in program expenses over three years (Allen and McAllister 2019). I control for *Relative Equity*, defined as net assets divided by total revenue, as prior literature has shown organizations with a lower equity ratio are more vulnerable (Trussel and Greenlee 2004). I control for *Revenue Concentration*, defined as the sum of the squared proportion that each of five revenue sources contributes to total revenue, as organizations with more revenue diversity are more likely to survive in the event of a particular revenue source drying up.⁴²

⁴² The revenue sources included are: program service revenue, membership dues, gross sales of other assets, investment income, and contributions.

I control for *Operating Margin*, defined as the difference between total revenue and total expense scaled by total revenue, and *Negative Margin*, 1 when *Operating Margin* is negative, as prior research finds organizations with lower or negative operating margins are more vulnerable (Greenlee and Trussel 2000; Trussel and Greenlee 2004; Parsons and Trussel 2009; Trussel 2002). *Working Capital*, defined as current assets minus current liabilities scaled by current assets when current assets is larger than current liabilities, has been shown to be associated with financial vulnerability in charities (Gordon et al. 2013). Size is controlled for using *Ln(Total Assets)*, as larger organizations have been found to be less vulnerable (Trussel 2002). Each determinant is lagged three years. Industry fixed effects control for time invariant differences between industries.

Below are the results for the predicted vulnerability model. All control variables are significant, and the directions of the coefficients are as expected based on theory and match those of Allen and McAllister (2019). The probability of a financial distress increases as a function of *Revenue Concentration* and *Negative Margin*, and decreases as a function of *Relative Equity*, *Operating Margin*, *Working Capital* and *Ln(Total Assets)*.

Predicted Vulnerability Probit Model

	(1)
Dependent Variable:	<i>Prob(Distress)_{i,t}</i>
<i>Relative Equity</i> _{i,t-3}	-0.007*** (-24.40)
<i>Revenue Concentration</i> _{i,t-3}	0.005*** (15.35)
<i>Operating Margin</i> _{i,t-3}	-0.231*** (-50.19)
<i>Negative Margin</i> _{i,t-3}	0.219*** (57.83)
<i>Working Capital</i> _{i,t-3}	-0.223*** (-45.41)
<i>Ln(Total Assets)</i> _{i,t-3}	-0.031*** (-37.30)
Constant	-0.635*** (-16.28)
Industry Fixed Effects	Yes
N	1,057,306
R ²	0.030
<i>t</i> statistics in parentheses	
* p<.10, ** p<.05, *** p<.01	

APPENDIX C: GRANT TRACING IN CHAPTER 2

In this appendix I detail the process of tracing private foundation grant disclosures to nonprofit organization recipients. I also discuss how I categorize non-501(c)(3) grant recipients and the results of the tracing of grant disclosures. I begin with a dataset of 990-PF Part XV grant disclosures, which includes 7,099,516 total grants from 2010-2020. Part XV requires the disclosure of the name and address of the grantee, and the purpose and amount of the grant. Grants pledged for future payment are removed from my sample to avoid double-counting them once they are paid in a future period.⁴³ I consolidate grants from the same foundation to the same grantee within the same year. As the EIN of the grantee is not included, I utilize the name and state of the grantee to trace grants to nonprofit organization recipients. To get the EIN of grantees, I use the National Center for Charitable Statistics (NCCS) Business Master File (BMF). The BMF is a cumulative list of nonprofit organizations, including the EIN, name, and state of headquarters.⁴⁴

To match the names of grantees from Part XV to the BMF, I begin by performing various data cleaning procedures on both name fields. I capitalize all letters, then remove all special characters and spaces. I next remove common words that may or may not be included in the grant disclosure, such as “ASSOCIATION” and “INTERNATIONAL”.

⁴³ Grants marked as future pay account for only 3% of total grants disclosed during my sample period.

⁴⁴ For some organizations, the BMF lists many EIN with the same name. These cases appear to be organizations with many regional/local organizations, such as state PTA associations, and fraternities/sororities. As it is impossible to identify the particular EIN that the grant is directed to, I remove these grants.

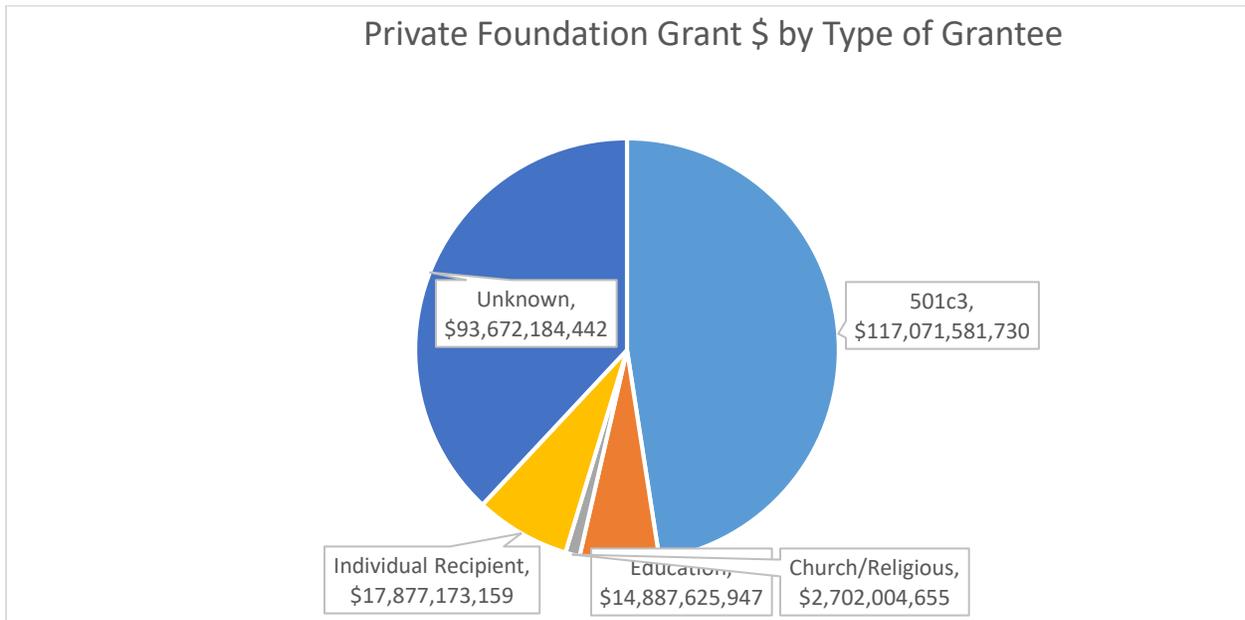
Following these procedures, I perform an exact match on name and state. An exploration of the remaining non-matched grants finds that many grantee names appear to be cut short, which causes a non-match. To attempt to capture these grants, I utilize a fuzzy match procedure.⁴⁵ I first remove all exact matches from the grant dataset, leaving only non-matched grantee names. I utilize the COMPGED function in SAS, with a cutoff of 100. This cutoff allows matches such as “ALASKA MOUNTAIN RESCUE” to “ALASKA MOUNTAIN RESCUE GROUP”. In cases where the fuzzy match result returns multiple BMF matches to the grantee name, I remove those observations, as it is difficult to determine which of the matches is correct. This tends to happen in cases where the grantee name is very short and potentially abbreviated, such as with the grantee name “AUBURN”, which has nine potential matches, including “AUBURN ALUMNI”, “AUBURN ARTS”, and “AUBURN DIAMOND”. The combined result of the exact and fuzzy match procedures result in 3,062,999 grants to nonprofit organizations.

After identifying grants to nonprofit organizations with the above methods, I am left with 2,464,979 grants to unknown recipients. As some of these may be grants to nonprofit organizations I have not matched, I first attempt to identify unknown grants that are *not* going to nonprofit organizations. To do this, I utilize keywords in grantee names that indicate the type of grantee. The dataset anonymizes the names of individual grantees with (“INDIVIDUAL RECIPIENT”), so I categorize these as individual recipients.⁴⁶ Grantee names with keywords such as (“CHURCH”, “SYNAGOGUE”, and “CHRISTIAN”) I categorize as religious

⁴⁵ For others seeking to replicate this process, I note that a fuzzy match of approximately 765,445 Part XV grantee names (Dataset A) and 2,586,286 BMF (Dataset B) organization names is very resource intensive. To shorten the time of completion, I run the fuzzy match state by state, only comparing grantee names to organizations in the BMF within the same state. I also only compare A:B and not B:A and only compare names that share the first letter. While this reduces the runtime, it still takes several days to complete the fuzzy match procedure.

⁴⁶ Private foundations are able to give grants to individuals with pre-approval from the IRS. These grants must be for a charitable purpose, and commonly are for scholarships.

organizations.⁴⁷ Grantee names with (“SCHOOL”, “ELEMENTARY”, “MIDDLE”, and “HIGH”) I categorize as education institutions. Many of these are public schools and thus government entities. The figure below reports the result of this process, which shows a remaining 1,884,916 grants with unknown recipients totaling \$93 billion.



⁴⁷ Churches are not required to file 990s, and thus are not included in the BMF.

APPENDIX D: VARIABLE DEFINITIONS FOR CHAPTER 3

Variable Definitions

Ln(Government Grants)	Natural log of government grants received [Part VIII, Line 1e]
Ln(Individual Donations)	Natural log of public donations [Part VIII, Line 1f] - private foundation grants [990-PF Part XV Grant Disclosures]
Ln(Private Foundation Grants)	Natural log of the sum of private foundation grants received [990-PF Part XV Grant Disclosures]
Ln(CEO Compensation)	Natural log of CEO total compensation [Part VII, W-2 Compensation]
Gendered CEO Switch	1 if female to male or male to female CEO switch, 0 if male to male or female to female switch [Schedule J]
Asset Tangibility	Net land, buildings, and equipment [Part X, Line 10c] / total assets [Part I, Line 20 End of Year]
Board Size	Number of voting board members [Part I, Line 3]
CEO Fundraising Efficiency	Donation + grant revenue [Part VIII Line 1e+1f] / CEO total compensation [Part VII, W-2 Compensation]
Commercial Dummy	1 if program service revenue [Part I, Line 9 Current Year] / (program service revenue+donations+grants) > 90%, 0 otherwise
Direct Donations	Direct, public donations [Part VIII, Line 1f]
Ln(Employees)	Natural log of the number of employees [Part V, Line 2a]
Governance	Sum of 16 governance practices from Part VI, increasing in good governance [Part vi]
Ln(Fundraising Expense)	Natural log of fundraising expense [Part I, Line 16b]
Ln(Org Age)	Natural log of (current year - year of formation [Header L])
Ln(Program Service Revenue)	Natural log of program service revenue [Part I, Line 9]
Ln(Total Assets)	Natural log of total assets [Part I, Line 20]
Other Revenue	Other revenue [Part I, Line 11]
Program Ratio	Program expense [Part IX, Line 25B] / total expense [Part IX, Line 25A]
Ln(Government Grants)	Natural log of government grants received [Part VIII, Line 1e]
Ln(Individual Donations)	Natural log of public donations [Part VIII, Line 1f] - private foundation grants [990-PF Part XV Grant Disclosures]
Ln(Private Foundation Grants)	Natural log of the sum of private foundation grants received [990-PF Part XV Grant Disclosures]
Ln(CEO Compensation)	Natural log of CEO total compensation [Part VII, W-2 Compensation]

APPENDIX E: JOURNALS INCLUDED IN SEARCH FOR NONPROFIT ACCOUNTING

RESEARCH FOR CHAPTER 4

Journal Title	Abbreviation
Top 6 Journals	
<i>The Accounting Review</i>	TAR
<i>Accounting, Organizations & Society</i>	AOS
<i>Contemporary Accounting Research</i>	CAR
<i>Journal of Accounting and Economics</i>	JAE
<i>Journal of Accounting Research</i>	JAR
<i>Review of Accounting Studies</i>	RAST
American Accounting Association Journals^a	
<i>Accounting Horizons</i>	Horizons
<i>Auditing: A Journal of Practice & Theory</i>	AJPT
<i>Behavioral Research in Accounting</i>	BRIA
<i>Current Issues in Auditing</i>	Current Issues
<i>Journal of Emerging Technologies in Accounting</i>	JETA
<i>Journal of Forensic Accounting Research</i>	Forensic
<i>Journal of Governmental & Nonprofit Accounting</i>	JOGNA
<i>Accounting Historians Journal</i>	Historians
<i>Journal of International Accounting Research</i>	International
<i>ATA Journal of Legal Tax Research</i>	JLTR
<i>Journal of Management Accounting Research</i>	JMAR
<i>Accounting and the Public Interest</i>	API
<i>Journal of Financial Reporting</i>	JFR
<i>Journal of Information Systems</i>	JIS
<i>Journal of the American Taxation Association</i>	JATA
Other Journals	
<i>Financial Accountability & Management</i>	FAM
<i>Journal of Accounting, Auditing & Finance</i>	JAAF
<i>Journal of Accounting Literature</i>	JAL

	<i>Journal of Accounting and Public Policy</i>	JAPP
	<i>Journal of Business Ethics</i>	JBE
	<i>Journal of Public Budgeting, Accounting & Financial Management</i>	JPBAFM
	<i>Nonprofit and Voluntary Sector Quarterly</i>	NVSQ
	<i>Research in Governmental and Nonprofit Accounting</i>	RIGNA

^aThe AAA journal *Issues in Accounting Education* is not included in our search as we are not examining pedagogical research. There were no nonprofit accounting papers published in the *Journal of International Accounting Research* from 2000–2020.

APPENDIX F: NONPROFIT ACCOUNTING RESEARCH PAPERS PUBLISHED IN
SELECTED JOURNALS FOR 2000-2020 FOR CHAPTER 4

- Abernethy, M.A. and A.M. Lillis. 2001. Interdependencies in organization design: A test in hospitals. *Journal of Management Accounting Research* 13. Healthcare, International, Managerial
- Abernethy, M.A. and E. Vagnoni. 2004. Power, organization design and managerial behaviour. *Accounting, Organizations & Society* 29 (3-4). Healthcare, International, Managerial
- Abzug, R., A. Olbrecht, M. Sabrin and E. DeLeon. 2016. Nonprofit financing to the rescue? The slightly twisted case of local educational foundations and public education in New Jersey. *Nonprofit and Voluntary Sector Quarterly* 45 (1). Foundations
- Aggarwal, R.K., Evans, M.E. & Nanda, D. 2012. Nonprofit boards: Size, performance, and managerial incentives. *Journal of Accounting and Economics* 53 (1, 2). Compensation, Governance/Accountability
- Agle, B.R. and P.C. Kelley. 2001. Ensuring validity in the measurement of corporate social performance: Lessons from Corporate United Way and PAC campaigns. *Journal of Business Ethics* 31 (3). Corporate Giving, Research Methodology
- Agyemang, I., D.D. Bay, G.L. Cook and P. Pacharn. 2019. Individual donor support for nonprofits: The roles of financial and emotional information. *Behavioral Research in Accounting* 31 (1). Financial Reporting/Disclosures
- Aidemark, L. 2001. The meaning of balanced scorecards in the health care organisation. *Financial Accountability & Management* 17 (1). Healthcare, Managerial, International, Governance/Accountability
- Aidemark, L.G. and E.K. Funck. 2009. Measurement and health care management. *Financial Accountability & Management* 25 (2). Healthcare, International, Managerial
- Allen, A. and B. McAllister. 2018. CEO compensation and performance in US private foundations. *Financial Accountability & Management* 34 (2). Foundations, Compensation
- Allen, A.C. and B.P. McAllister. 2019. How private foundation sophistication affects capital campaign grant decisions. *Journal of Governmental & Nonprofit Accounting* 8 (1). Financial Reporting/Disclosures, Foundations

- Amato, L.H. and C.H. Amato. 2007. The effects of firm size and industry on corporate giving. *Journal of Business Ethics* 72 (3). Corporate Giving
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- Amin, K. and E. Harris. 2020 (early online). The effect of investor sentiment on nonprofit donations. *Journal of Business Ethics*. Miscellaneous
- Arai, K. 2006. Reforming hospital costing practices in Japan: An implementation study. *Financial Accountability & Management* 22 (4). Managerial, Healthcare, International
- Archambeault, D.S., S. Webber and J. Greenlee. 2015. Fraud and corruption in U.S. nonprofit entities: A summary of press reports 2008-2011. *Nonprofit and Voluntary Sector Quarterly* 44 (6). Fraud
- Arnaboldi, M. and G. Azzone. 2004. Benchmarking university activities: An Italian case study. *Financial Accountability & Management* 20 (2). Managerial, Higher Education, International
- Arya, A. and B. Mittendorf. 2015. Career concerns and accounting performance measure in nonprofit organizations. *Accounting, Organizations & Society* 40. Compensation, Financial Reporting/Disclosures
- Baber, W. R.; P.L. Daniel and A.A. Roberts. 2002. Compensation to managers of charitable organizations: An empirical study of the role of accounting measures of program activities. *The Accounting Review* 77 (3). Compensation
- Baber, W.R., A.A. Roberts and G. Visvanathan. 2001. Charitable organizations' strategies and program-spending ratios. *Accounting Horizons* 15 (4). Financial Reporting/Disclosures, Managerial
- Bai, G. 2013. How do board size and occupational background of directors influence social performance in for-profit and non-profit organizations? Evidence from California hospitals. *Journal of Business Ethics* 118 (1). Governance/Accountability, Healthcare
- Bai, G. 2016. Applying variance analysis to understand California hospitals' expense recovery status by patient groups. *Accounting Horizons* 30 (2). Healthcare, Managerial
- Balakrishnan, R. and N.S. Soderstrom. 2000. The cost of system congestion: Evidence from the healthcare sector. *Journal of Management Accounting Research* 12. Healthcare, Managerial
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- Balakrishnan, R., N.S. Soderstrom and T.D. West. 2007. Spending patterns with lapsing budgets: Evidence from U.S. Army hospitals. *Journal of Management Accounting Research* 19. Healthcare, Managerial
- Balakrishnan, R., G.B. Sprinkle and M.G. Williamson. 2011. Contracting benefits of corporate giving: An experimental investigation. *The Accounting Review* 86 (6). Corporate Giving
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- Ballantine, J., J. Forker and M. Greenwood. 2008. The governance of CEO incentives in English NHS hospital trusts. *Financial Accountability & Management* 24 (4). Healthcare, International, Compensation, Governance/Accountability
- Balsam, S. and E.E. Harris. 2014. The impact of CEO compensation on nonprofit donations. *The Accounting Review* 89 (2). Financial Reporting/Disclosures, Compensation
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- Chen, Q. 2015. How do directors of nonprofit organizations perceive the donor evaluation process? *Journal of Governmental & Nonprofit Accounting* 4 (1). Financial Reporting/Disclosures
- Chen, Q. 2016. Director monitoring of expense misreporting in nonprofit organizations: The effects of expense disclosure transparency, donor evaluation focus and organization performance. *Contemporary Accounting Research* 33 (4). Governance/Accountability, Financial Reporting/Disclosures, Earnings Management/Misreporting
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- Christiaens, J. and E. de Wielmaker. 2003. Financial accounting reform in Flemish universities: An empirical study of the implementation. *Financial Accountability & Management* 19 (2). Regulation/Standard Setting, Financial Reporting/Disclosures, Higher Education, International
- Chung, T.K.J, G.L. Harrison and R.C. Reeve . 2009. Interdependencies in organization design: A test in universities. *Journal of Management Accounting Research* 21. Higher Education, International, Managerial
- Conesa, M., D. Martinez-Martinez, J. Andrades and M. Larran. 2020. University foundations: An examination of the extent of their mandatory disclosures on their webpages. *Journal of Public Budgeting, Accounting & Financial Management* 32 (4). Financial Reporting/Disclosures, International, Higher Education
- Connolly, C. and N. Hyndman. 2001. A comparative study on the impact of revised SORP 2 on British and Irish charities. *Financial Accountability & Management* 17 (1). Financial Reporting/Disclosures. International, Regulation/Standard Setting
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APPENDIX G: SAMPLE OF 990 DATA SOURCES FOR CHAPTER 4

Data Source	Years Available	Type of 990	# Observations	# Variables	Schedules	Other Data
NCCS BMF https://nccs-data.urban.org/data.php?ds=bmf	1995–2020	All active organizations	1,748,611	39	None	None
NCCS SOI 990 https://nccs-data.urban.org/data.php?ds=soi	1982–2012 (Excludes 1984)	990	14,267	1,062	A, C, D, G, H, J, K, M, N, R	None
NCCS SOI 990-EZ https://nccs-data.urban.org/data.php?ds=soi	1992–2012	990-EZ	797	226	A, C, G, N	None
NCCS SOI PF https://nccs-data.urban.org/data.php?ds=soi	1993–2010	990-PF	17,285	328	None	None
NCCS Core PC https://nccs-data.urban.org/showDD.php?ds=core	1989–2017	990	382,401	148	A	None
NCCS Core PC Full 990 https://nccs-data.urban.org/showDD.php?ds=core	2012–2017	990	216,925	297	A	None
NCCS Core PF https://nccs-data.urban.org/showDD.php?ds=core	1989–2015	990-PF	109,984	170	None	None
NCCS Core Fiscal Year Trend PC https://nccs-data.urban.org/showDD.php?ds=trend	1989–2013	990	598,836	42	None	None
NCCS Core Fiscal Year Trend PF https://nccs-data.urban.org/showDD.php?ds=trend	1989–2013	990-PF	154,889	45	None	None
NCCS NTEE Master File https://nccs-data.urban.org/showDD.php?ds=misc	Cumulative	990-EZ, 990	2,990,895	3	None	NTEE Code
NCCS-Guidestar Digitized Data https://nccs-data.urban.org/showDD.php?ds=misc	1998–2003	990, 990-EZ	254,247	350	A	None
NODC E-Filer "Core" https://data.world/npdata	2010–2017	990, 990-EZ, 990-PF	210,476	213	D, H, J, N	None
Guidestar Advanced Nonprofit Data https://learn.guidestar.org/products/data-sets-for-research	2014–2017	990	250,000	350	None	Mission Metrics, Transparency
Federal Audit Clearinghouse A-133 https://facdissem.census.gov/	1997–2020	Single Audits	32,988	215	None	None
Charity Navigator https://www.charitynavigator.org/index.cfm?bay=content.view&cpid=1397	2001–2020	990	8200+ Nonprofits	0-4 Stars	None	Ratings, Impact
Better Business Bureau https://www.give.org/	Present Year	990	600+ Nonprofits	20 Standards	None	Ratings
Charity Watch https://www.charitywatch.org/	Present Year	990	670+ Nonprofits	A-F Rating	None	Ratings